US010486877B2

(12) **United States Patent**
Milbrandt et al.

(10) **Patent No.: US 10,486,877 B2**
(45) **Date of Patent: Nov. 26, 2019**

(54) **HANG TAB AND PRODUCT TAG ASSEMBLY, AND METHOD OF USE**

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(73) Assignee: **Bedford Industries, Inc.**, Worthington, MN (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **16/150,648**

(22) Filed: **Oct. 3, 2018**

(65) **Prior Publication Data**

US 2019/0031416 A1 Jan. 31, 2019

Related U.S. Application Data

(63) Continuation of application No. 15/479,711, filed on Apr. 5, 2017, now Pat. No. 10,124,945, which is a (Continued)

(51) **Int. Cl.**
B65D 73/00 (2006.01)
B65D 23/00 (2006.01)
(Continued)

(52) **U.S. Cl.**
CPC ***B65D 73/0064*** (2013.01); ***B65B 15/00*** (2013.01); ***B65D 23/005*** (2013.01); ***B65D 23/14*** (2013.01); ***B65D 73/0071*** (2013.01)

(58) **Field of Classification Search**
CPC .. B65D 23/005; B65D 73/0064; B65D 23/14; B65D 73/0071; B65B 15/00
(Continued)

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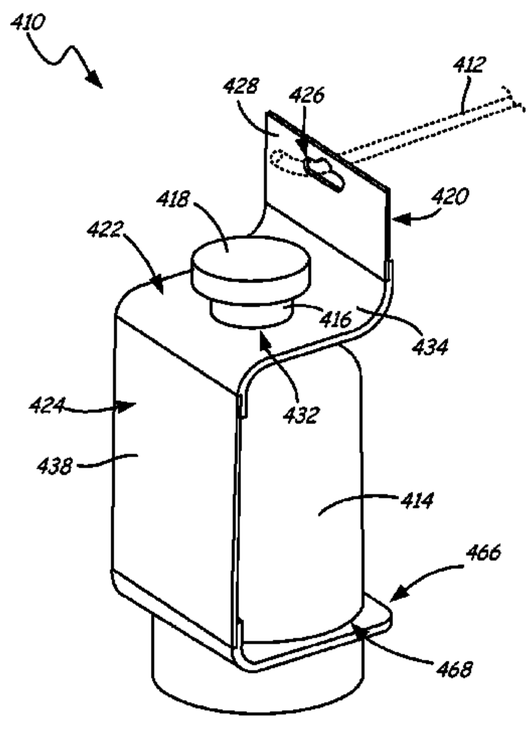
Primary Examiner — Muhammad Ijaz
(74) *Attorney, Agent, or Firm* — Mai-Tram D. Lauer; Westman, Champlin & Koehler, P.A.

(57) **ABSTRACT**

A hang tab and product tag assembly comprising a first panel, a second panel, and a third panel. The first panel includes an aperture configured to engage with a retention mechanism, the second panel includes an aperture that is configured to adjust to different dimensions.

15 Claims, 22 Drawing Sheets



Related U.S. Application Data

continuation of application No. 13/390,001, filed as application No. PCT/US2010/045575 on Aug. 16, 2010, now Pat. No. 9,676,536.

(60) Provisional application No. 61/234,050, filed on Aug. 14, 2009.

(51) **Int. Cl.**
B65D 23/14 (2006.01)
B65B 15/00 (2006.01)

(58) **Field of Classification Search**
USPC 248/224.8, 300, 309.1, 312; 211/113, 85, 211/85.29, 70.6, 60.1, 120; 206/153, 158, 206/147, 168, 429, 459.1, 485, 806; 40/642.01
See application file for complete search history.

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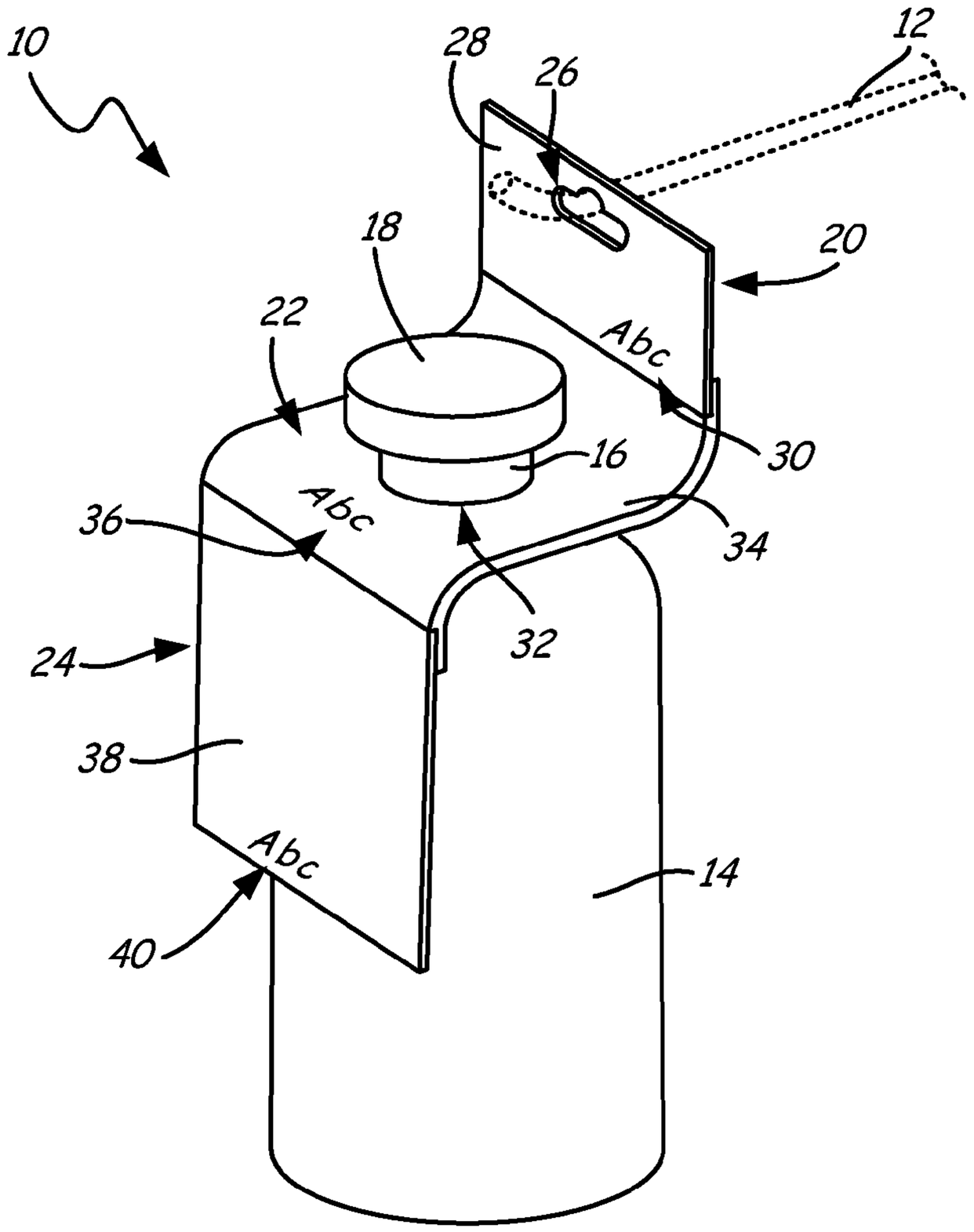
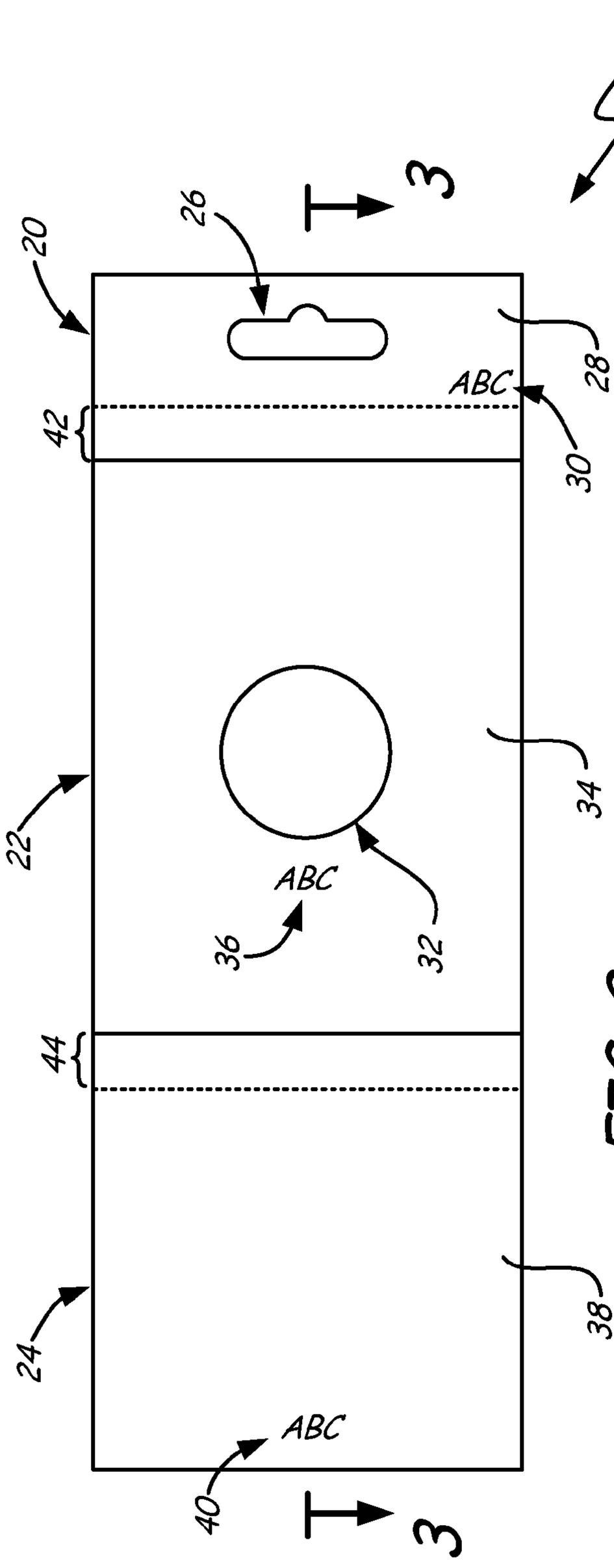


FIG. 1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ABC
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38
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ABC
40
3

FIG. 2

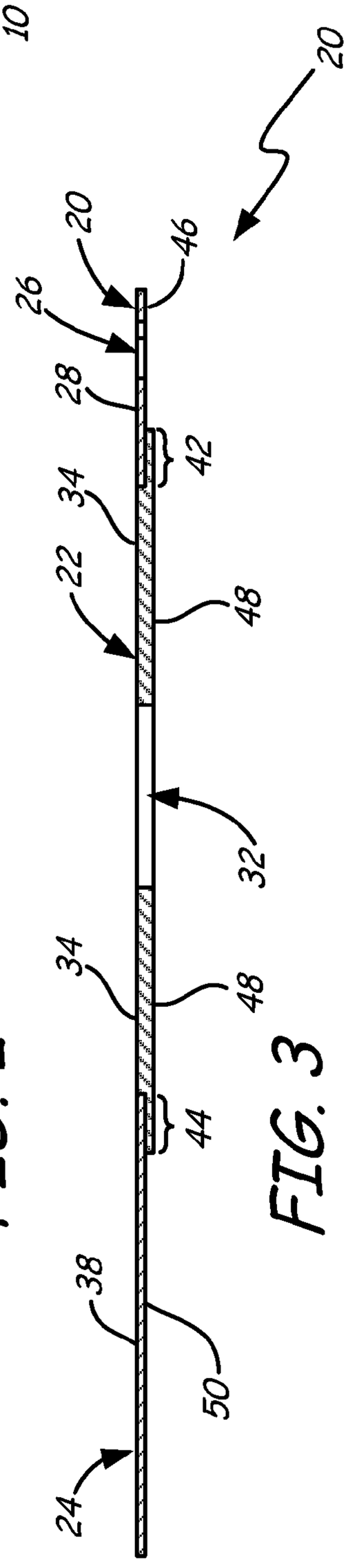
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FIG. 3

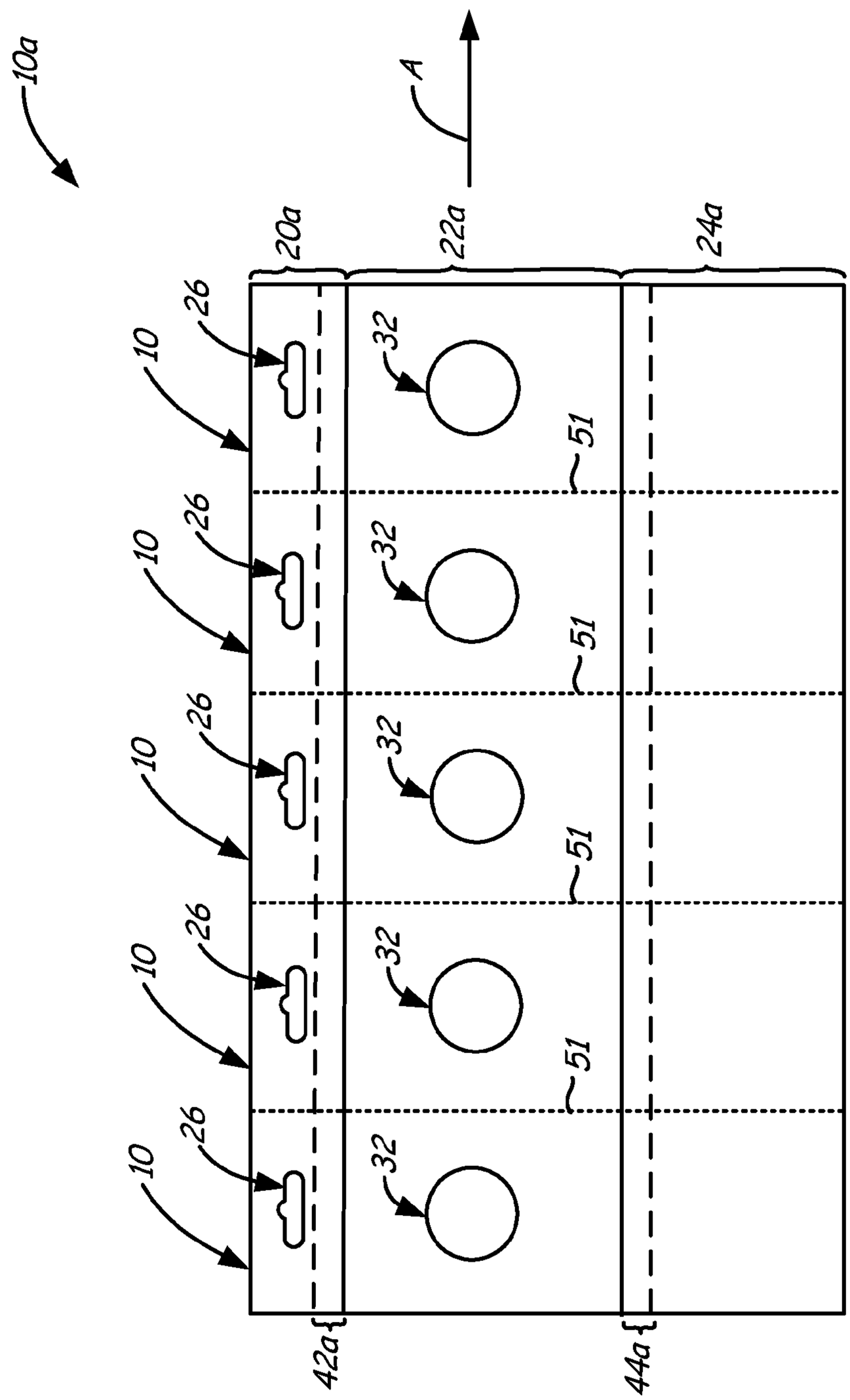
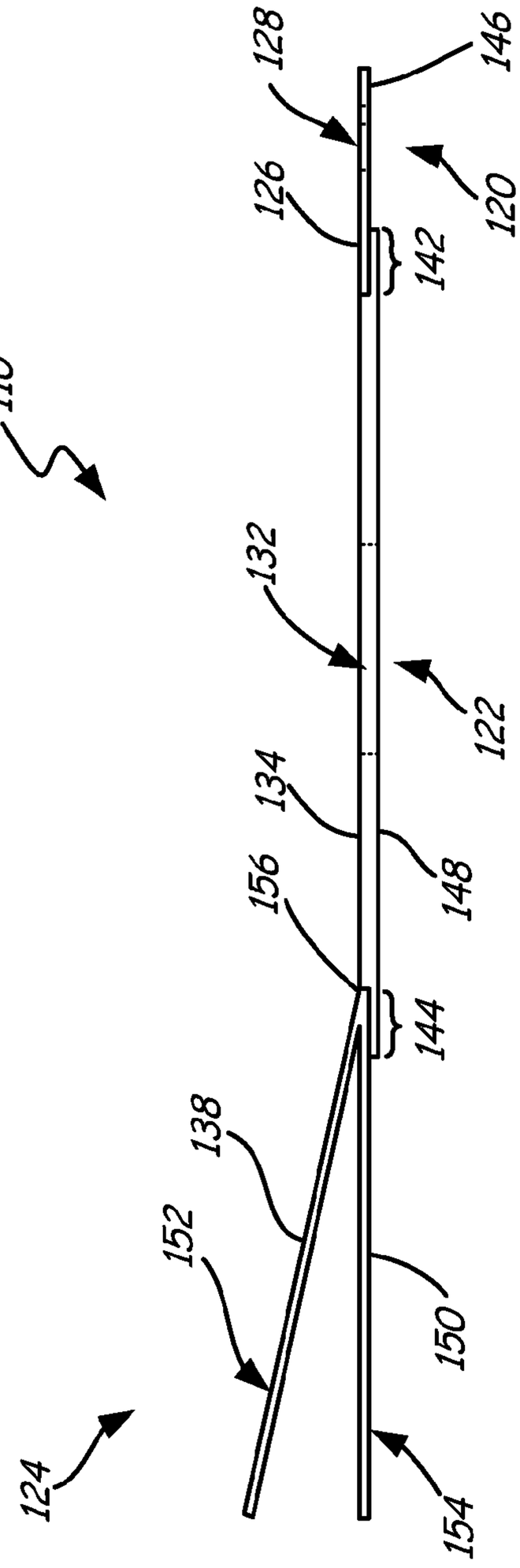


FIG. 3A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156
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152
150
124
154

FIG. 4

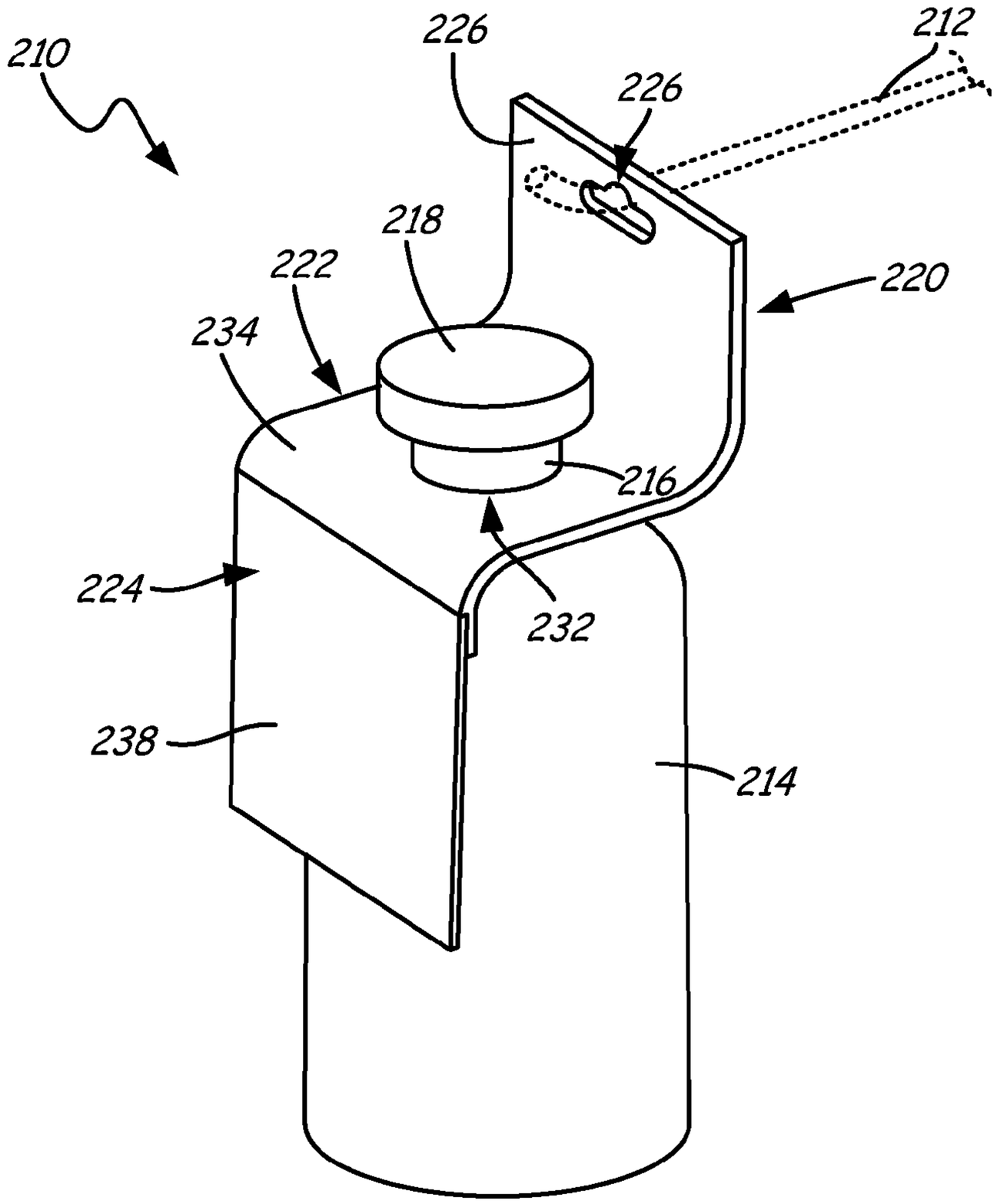
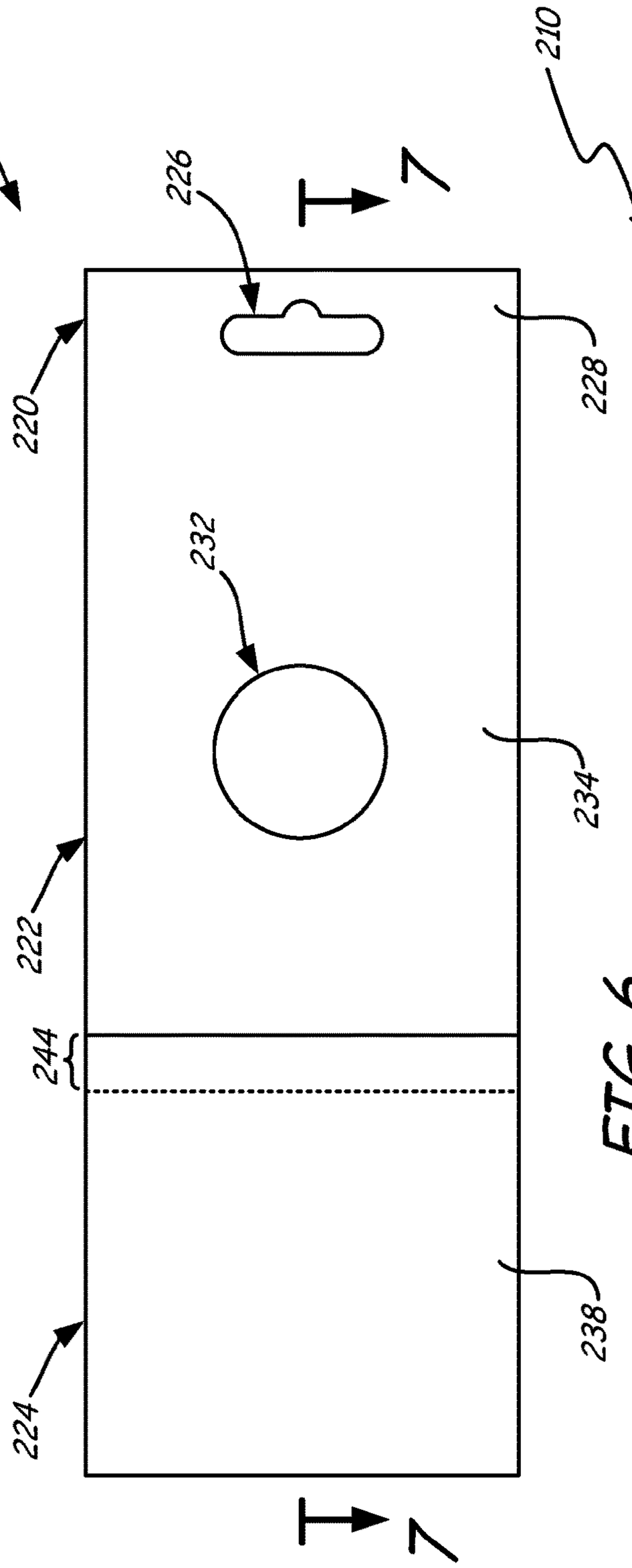


FIG. 5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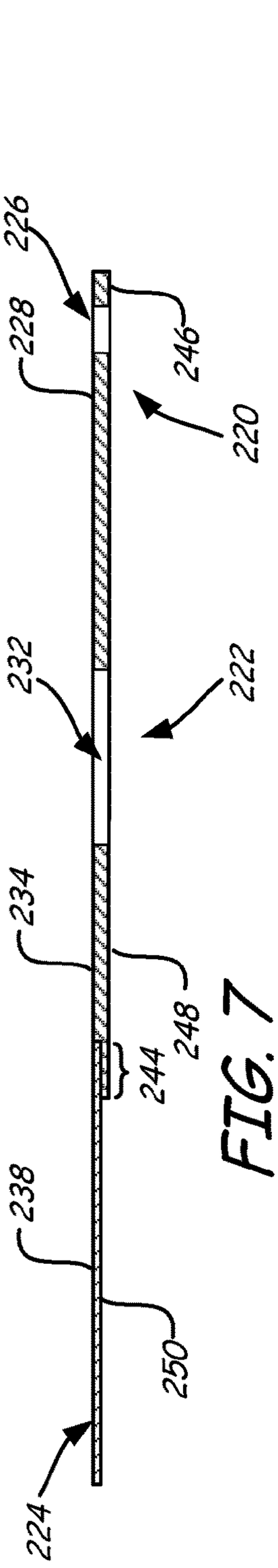
238
224
7

FIG. 6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250
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FIG. 7

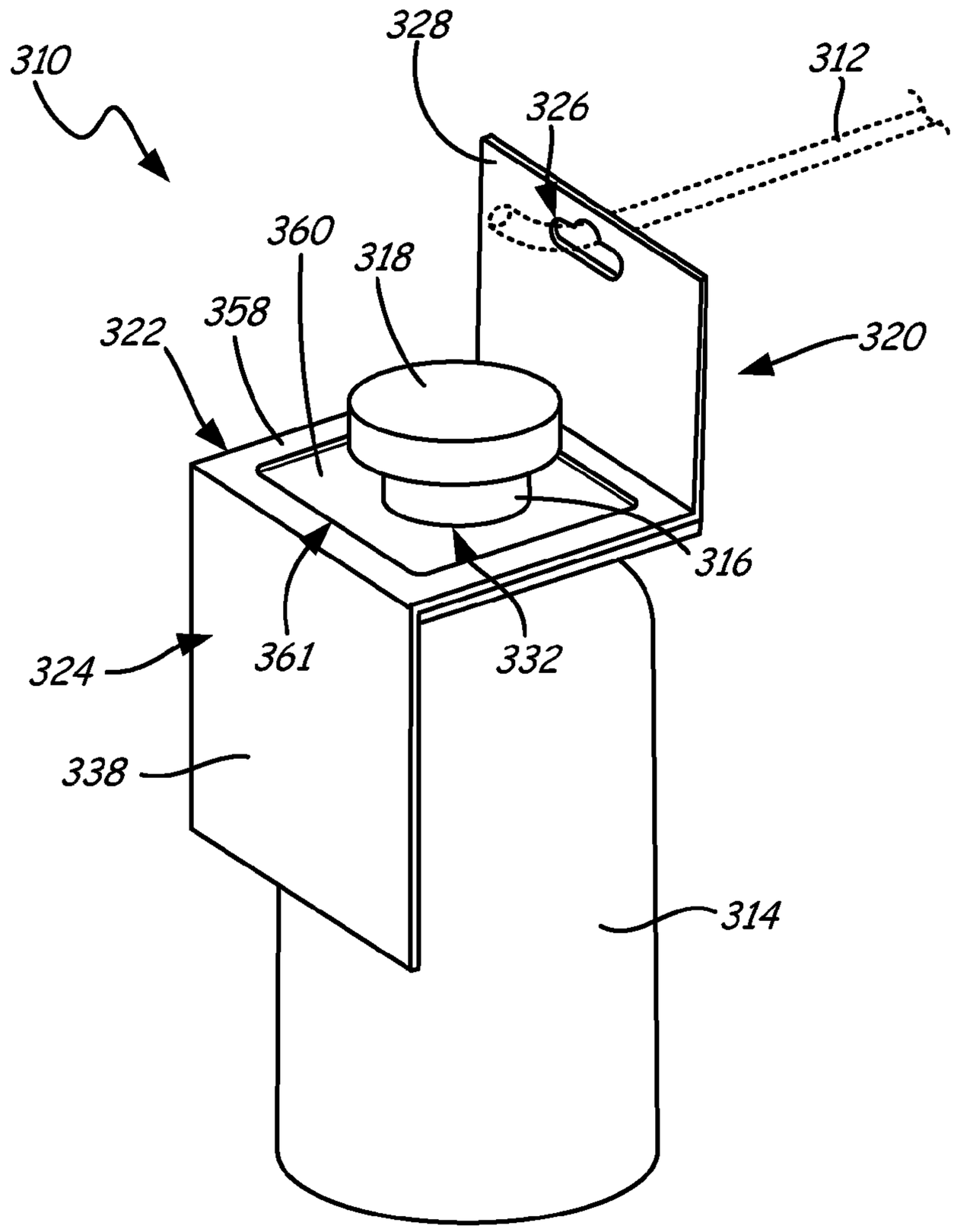
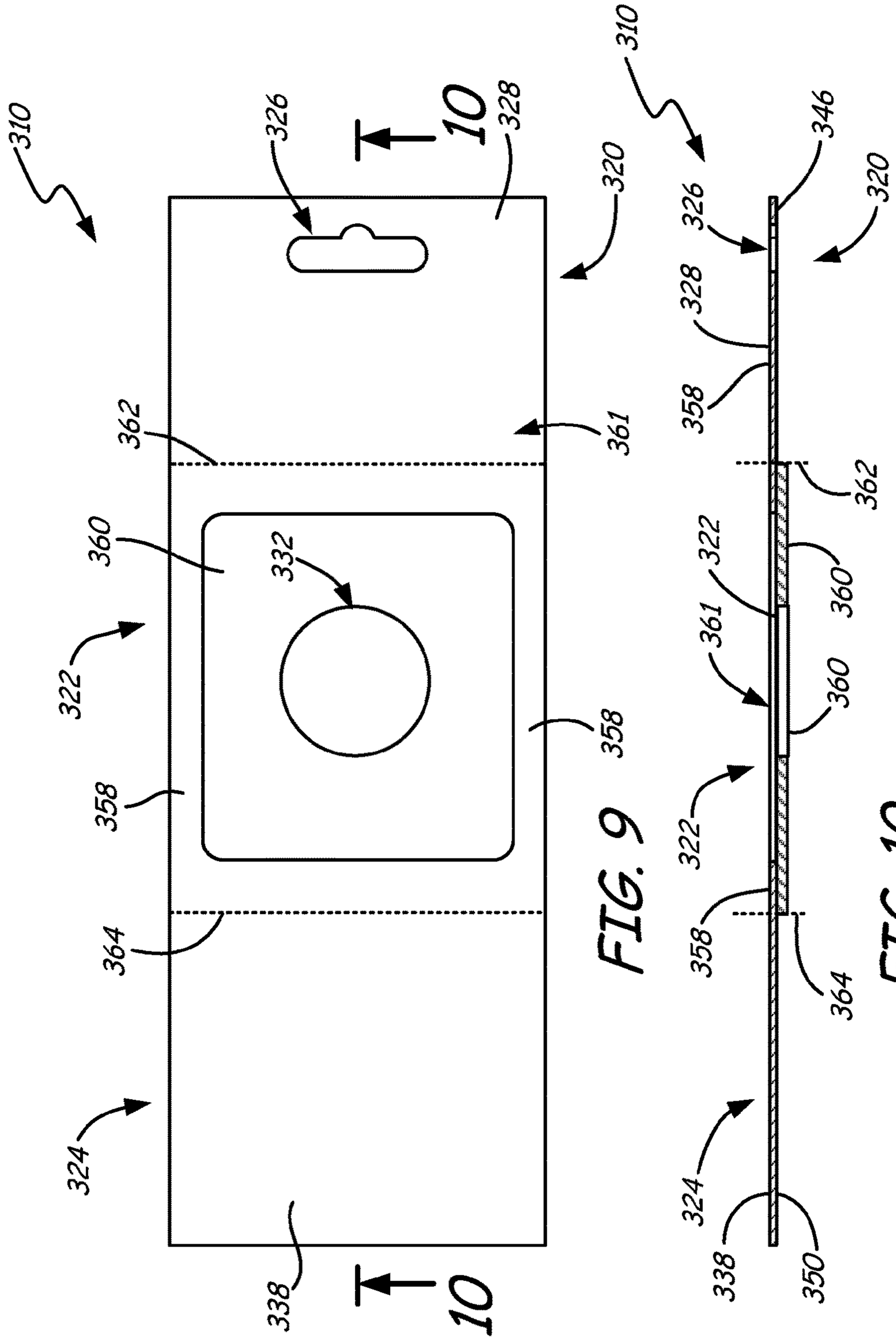


FIG. 8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338
324
10

FIG. 9

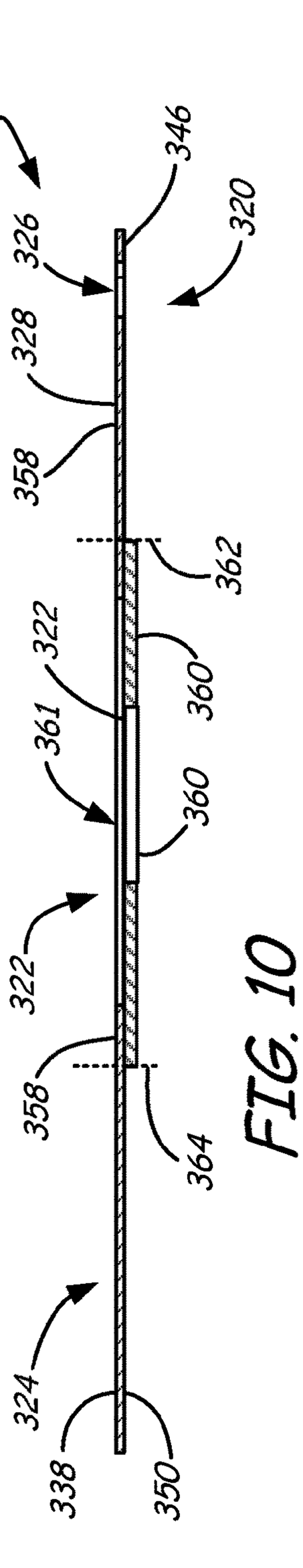
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FIG. 10

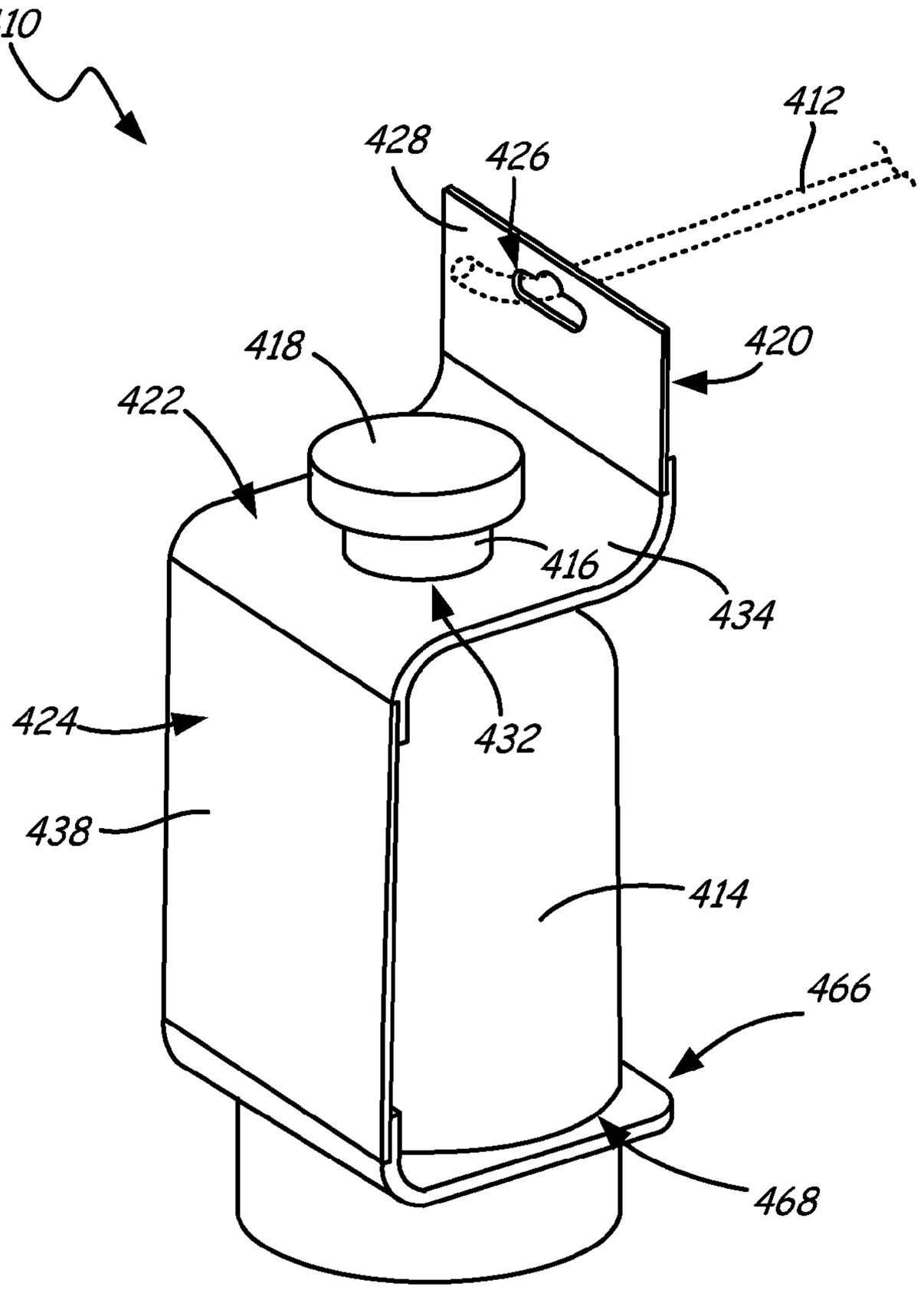
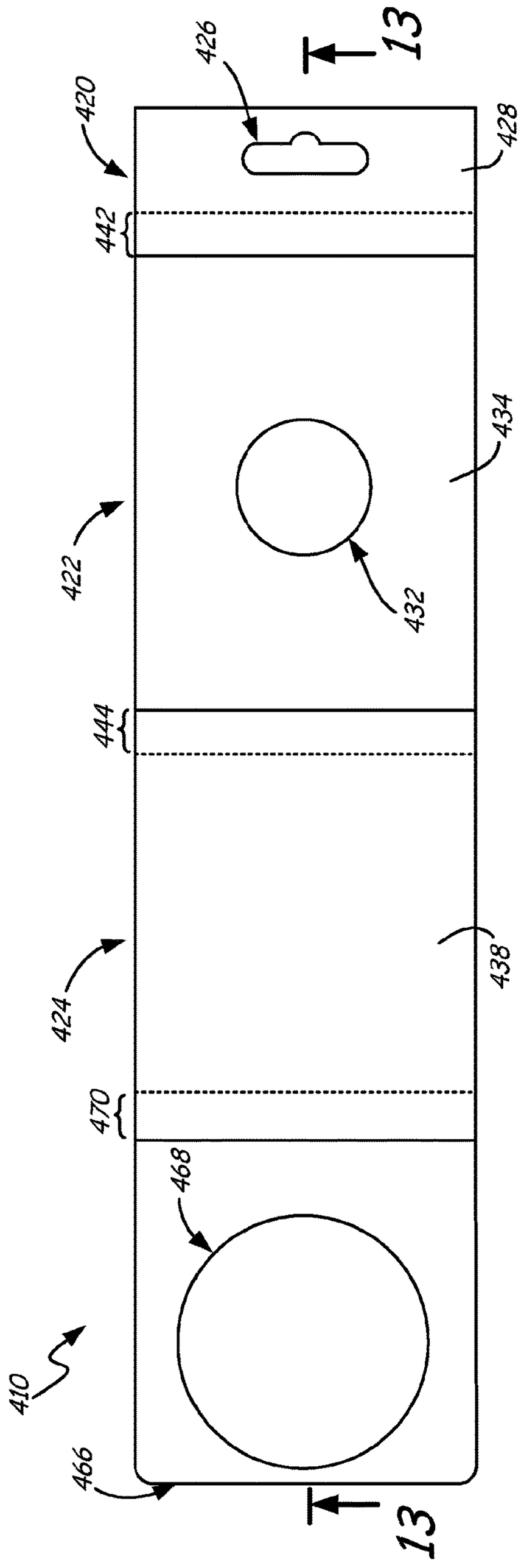


FIG. 11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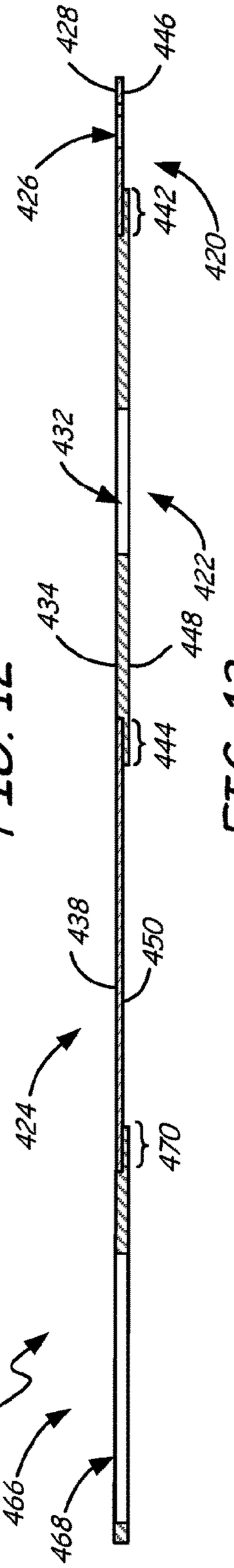
410
466
13

FIG. 12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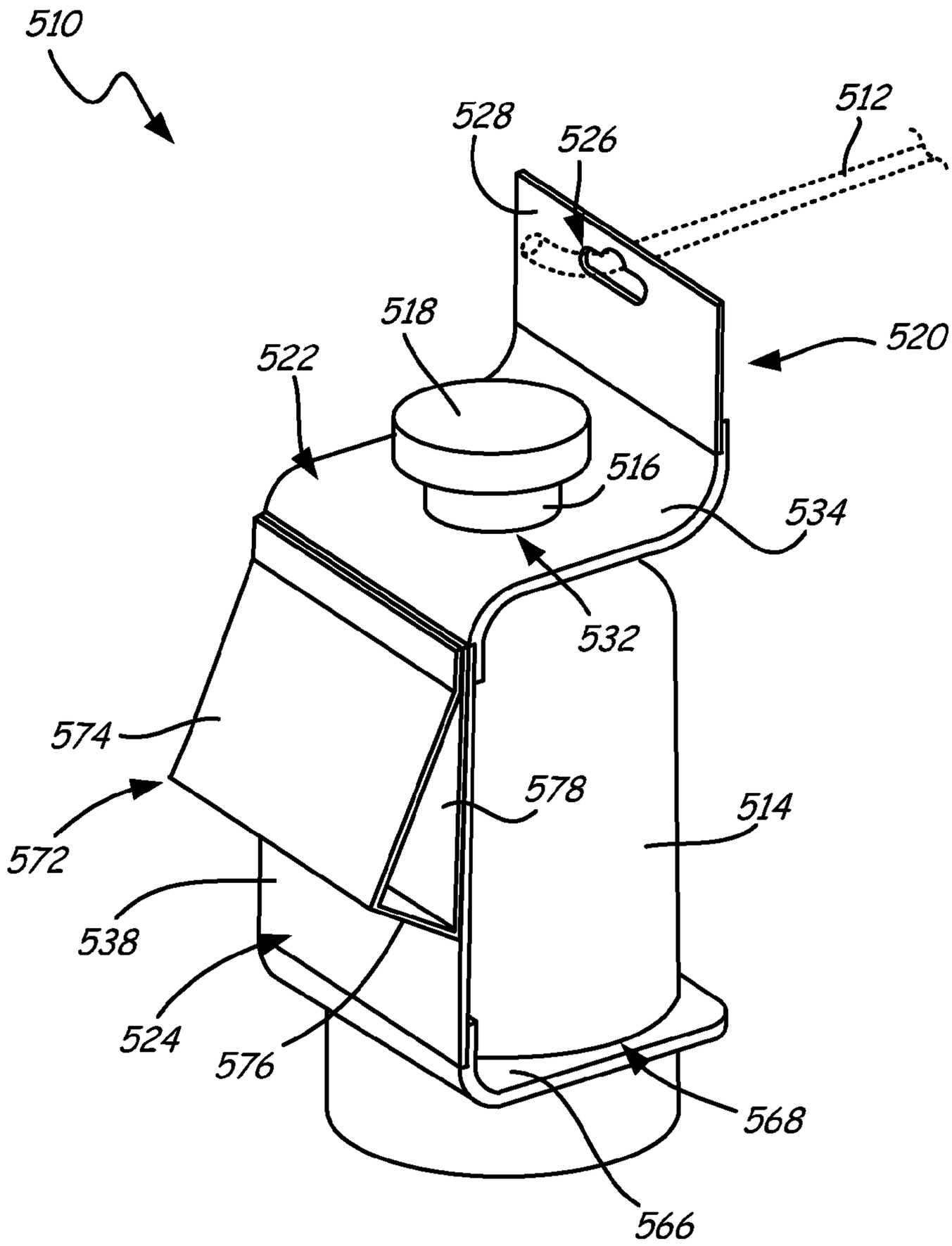
468

FIG. 13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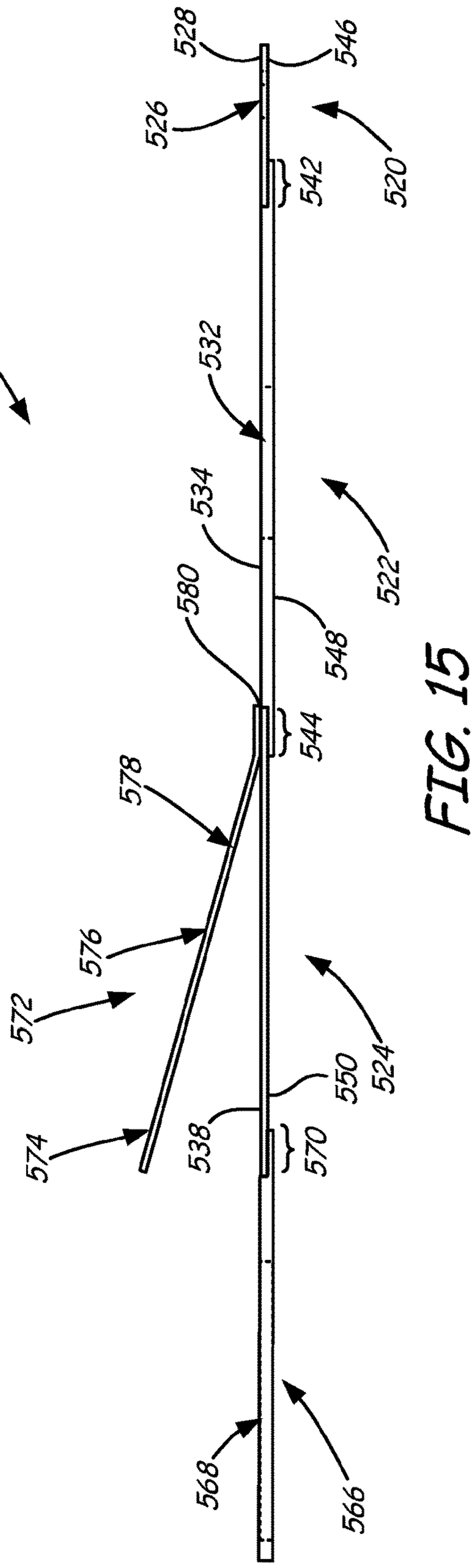
566

FIG. 14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566

FIG. 15

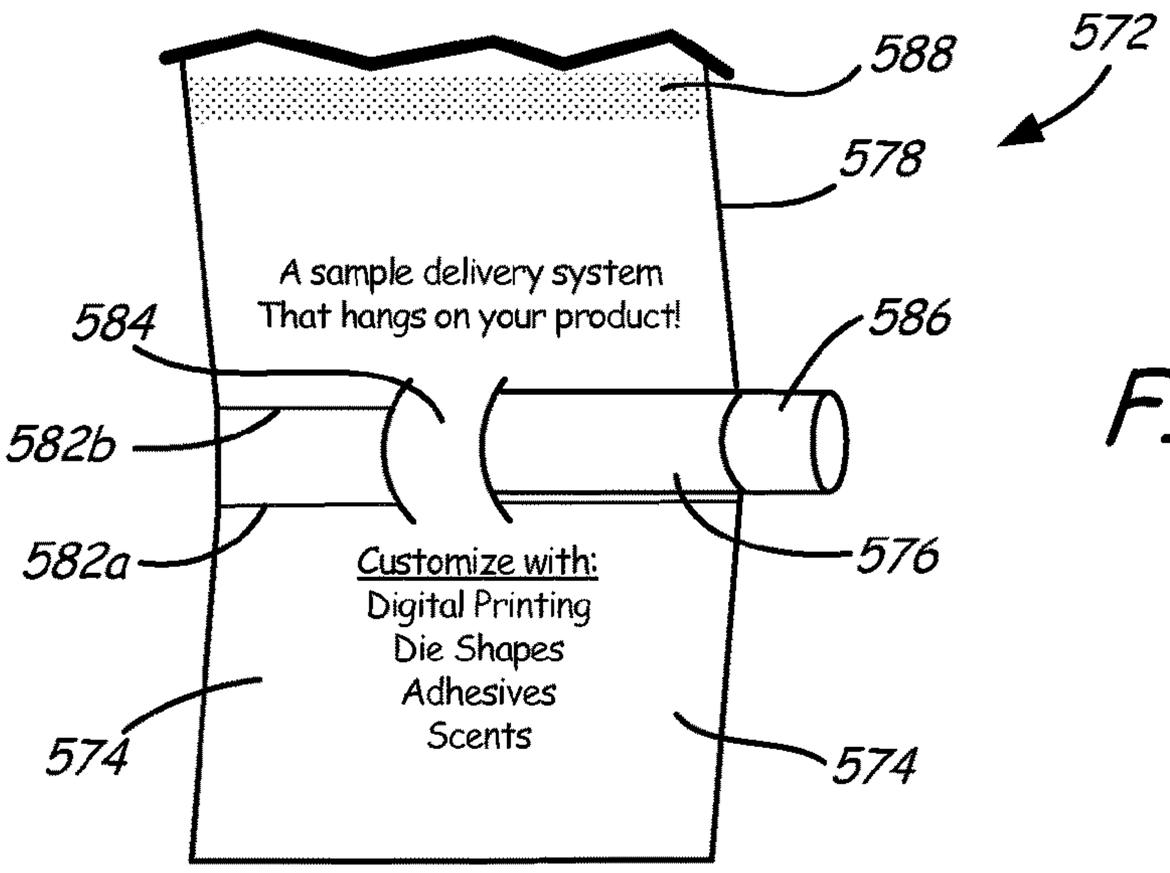
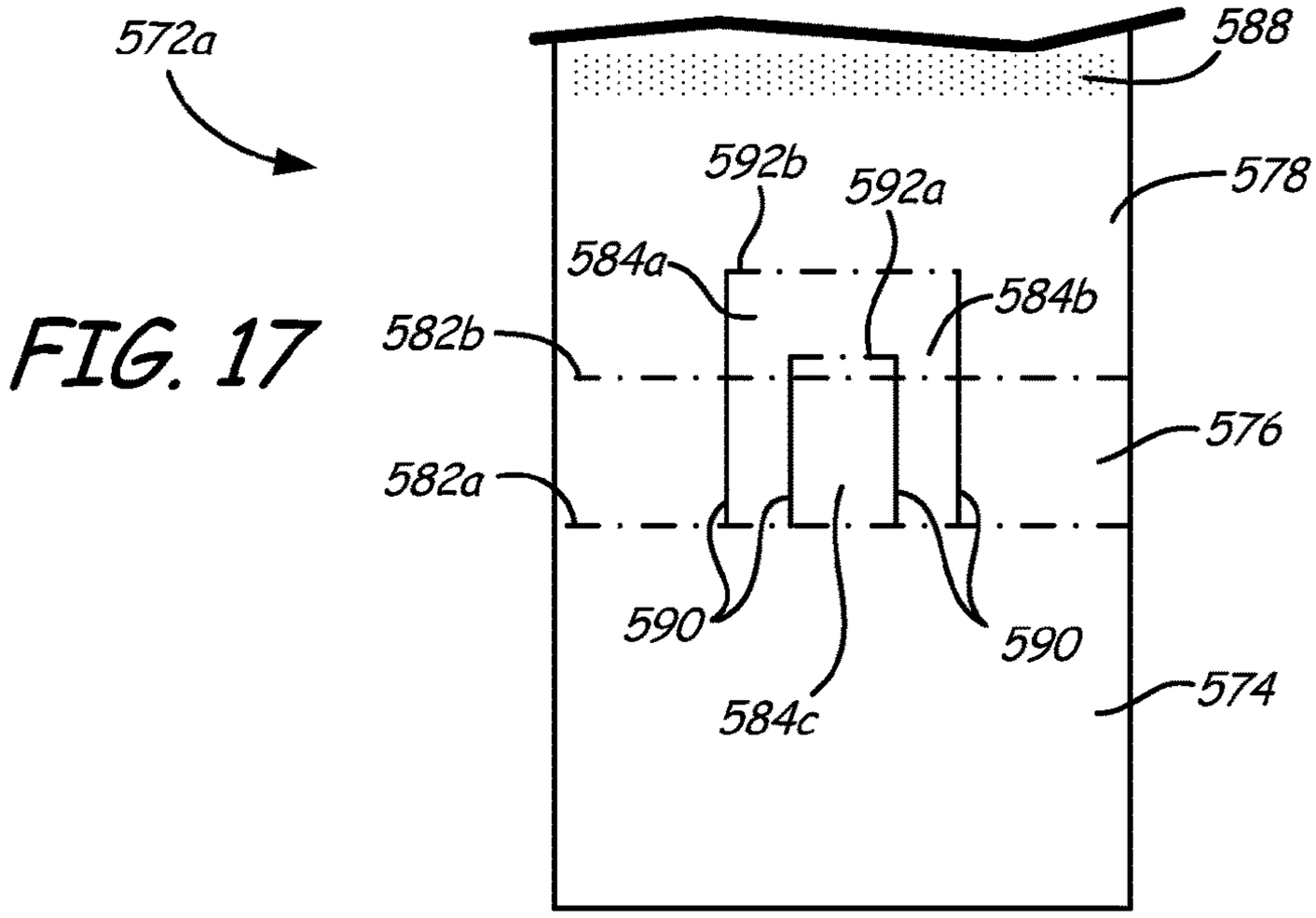

588
572
578
A sample delivery system
That hangs on your product!
584
586
582b
582a
576
Customize with:
Digital Printing
Die Shapes
Adhesives
Scents
574
574

FIG. 16


572a
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592b
592a
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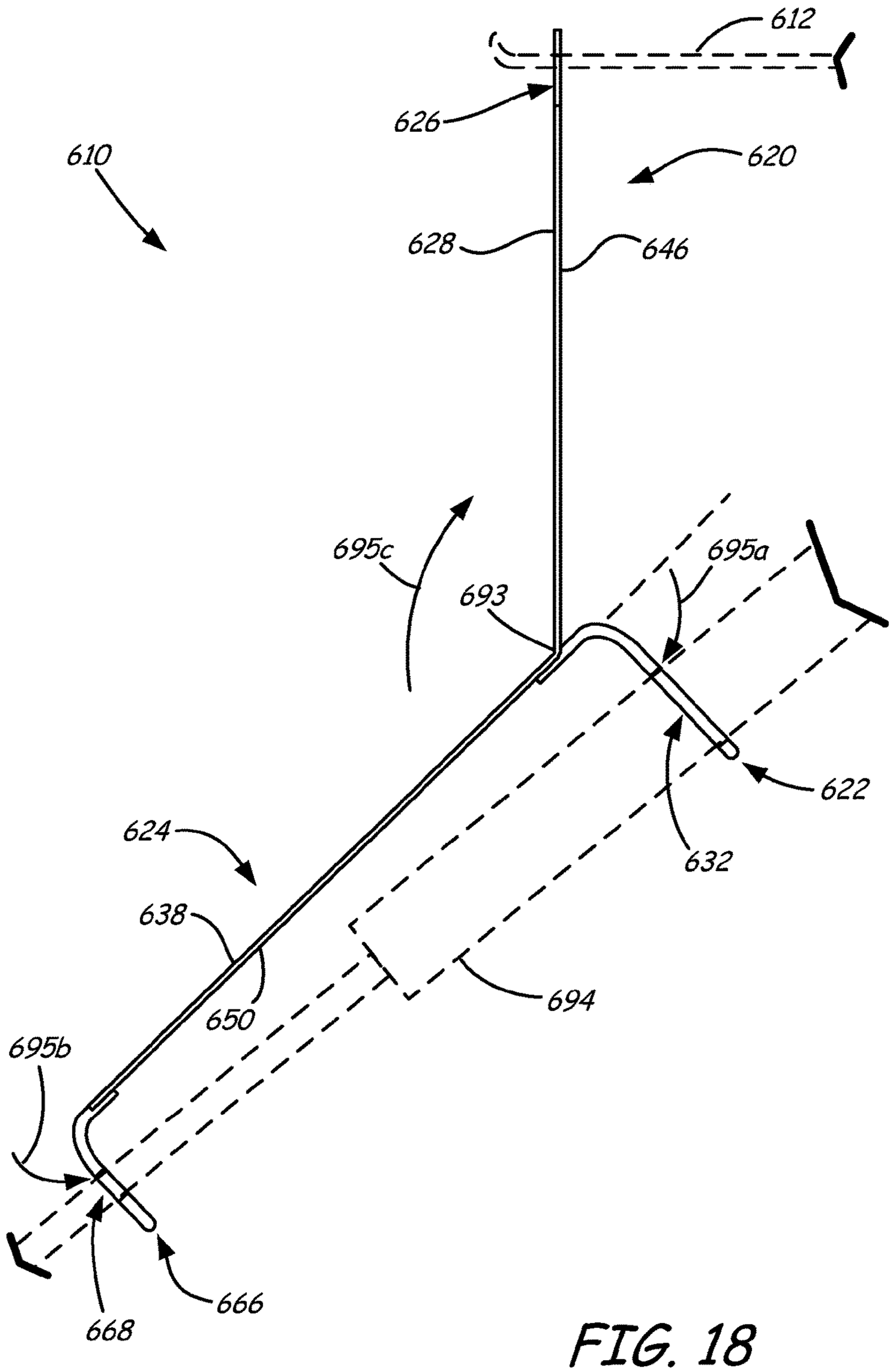
584a
584b
582b
576
582a
590
590
584c
574

FIG. 17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628
646
695c
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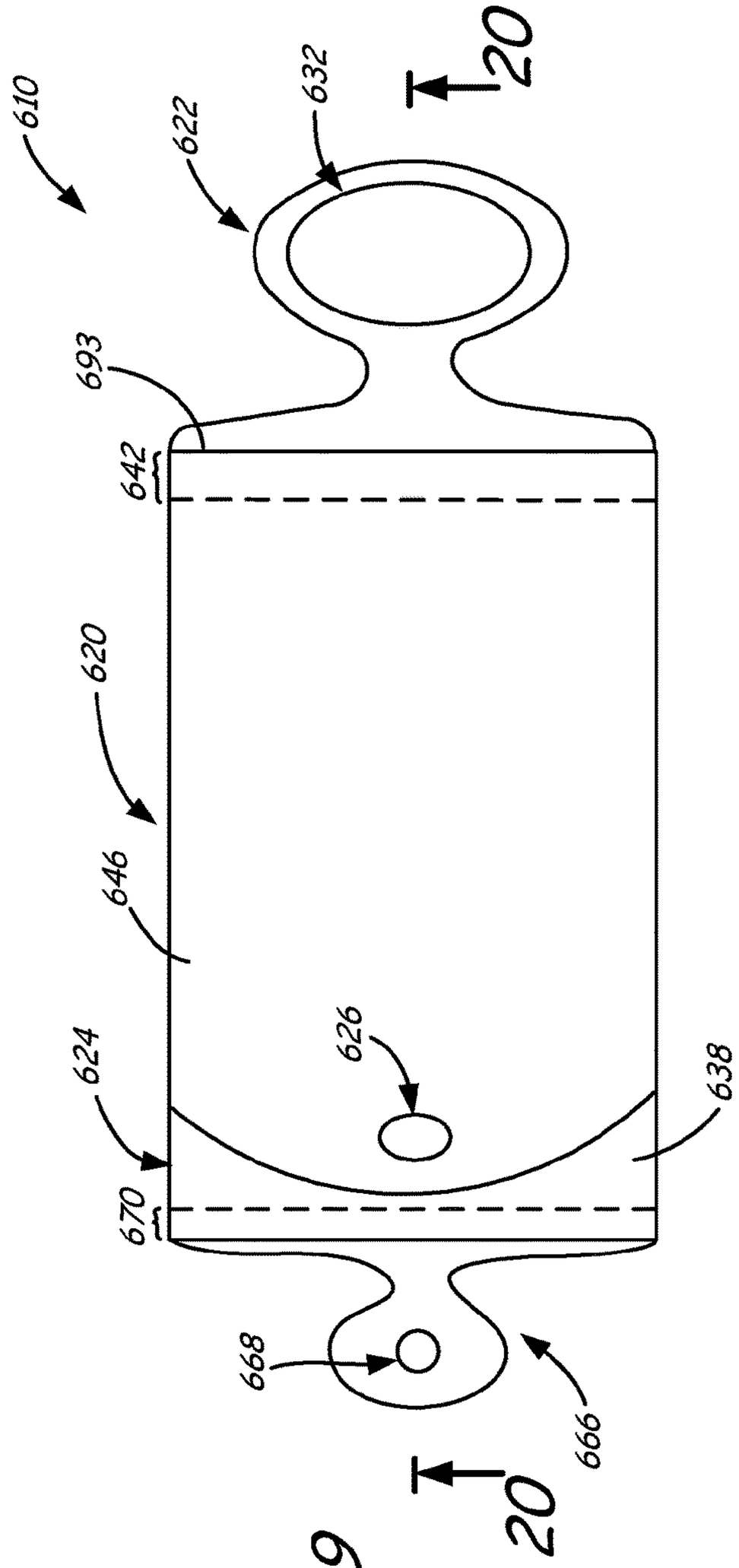
695a
622
624
632
638
694
650
695b
666
668

FIG. 18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666
20

FIG. 19

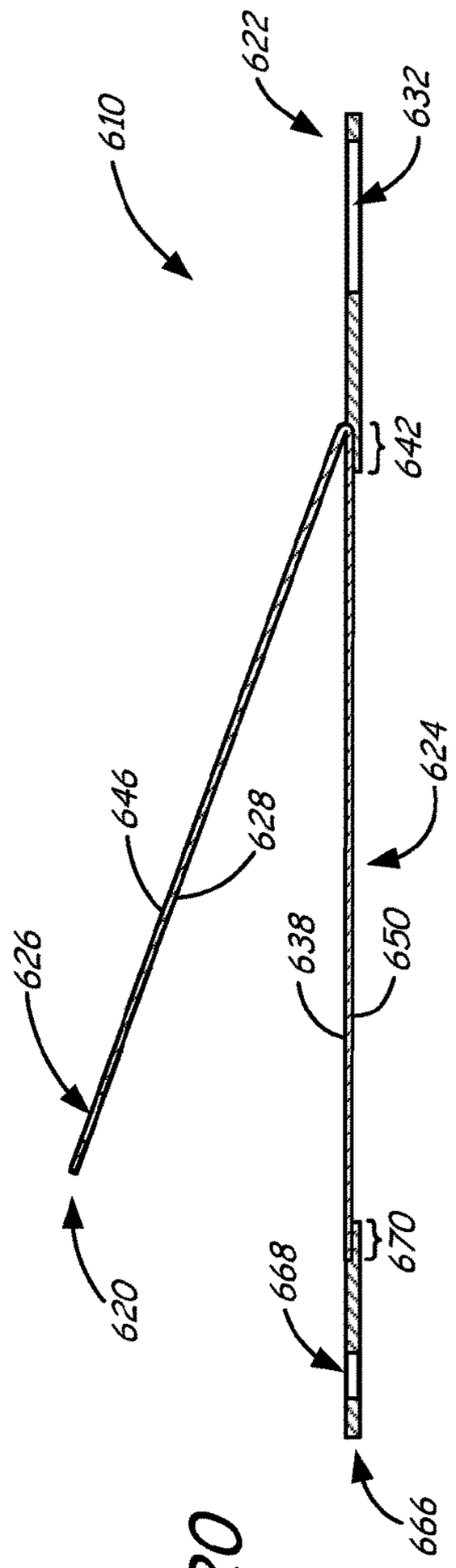
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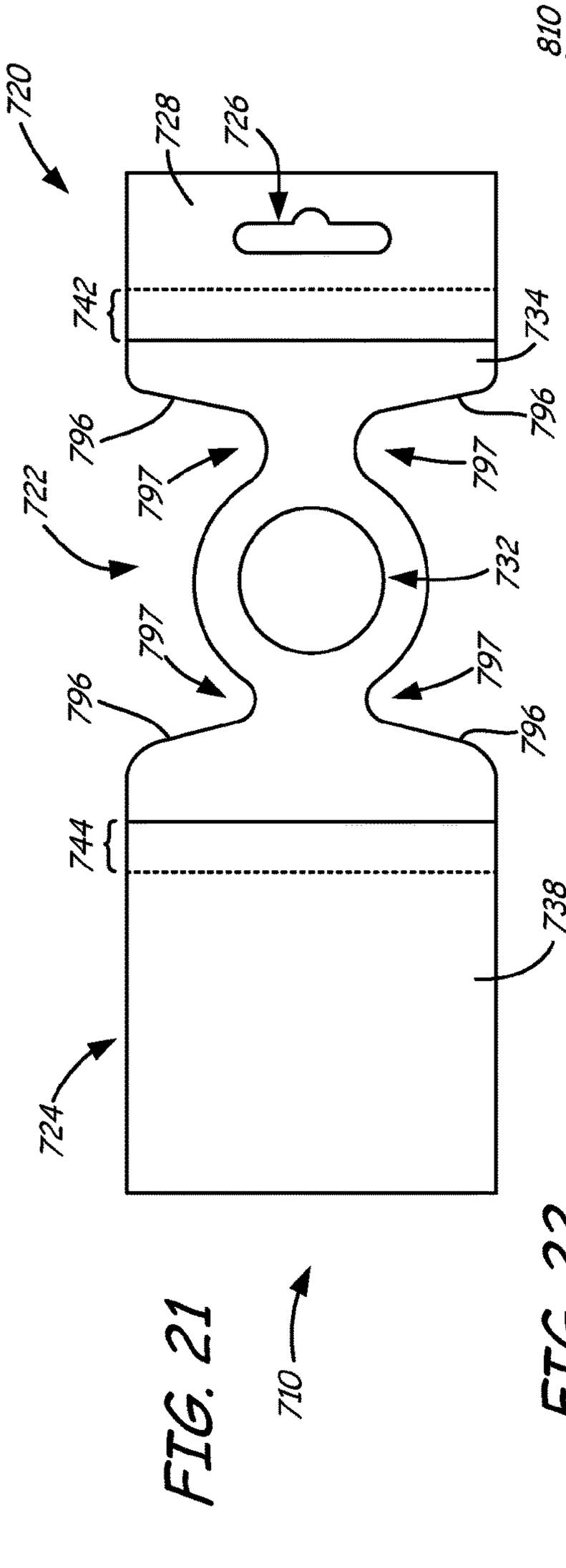
FIG. 20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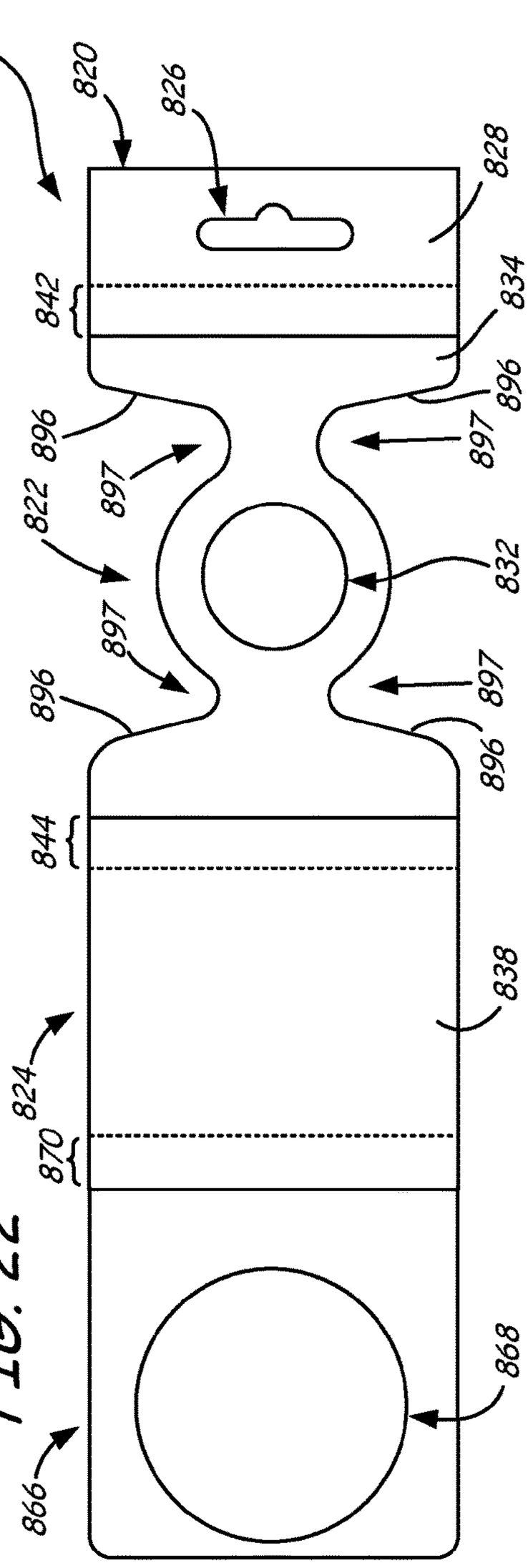
724
710

FIG. 21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828
842
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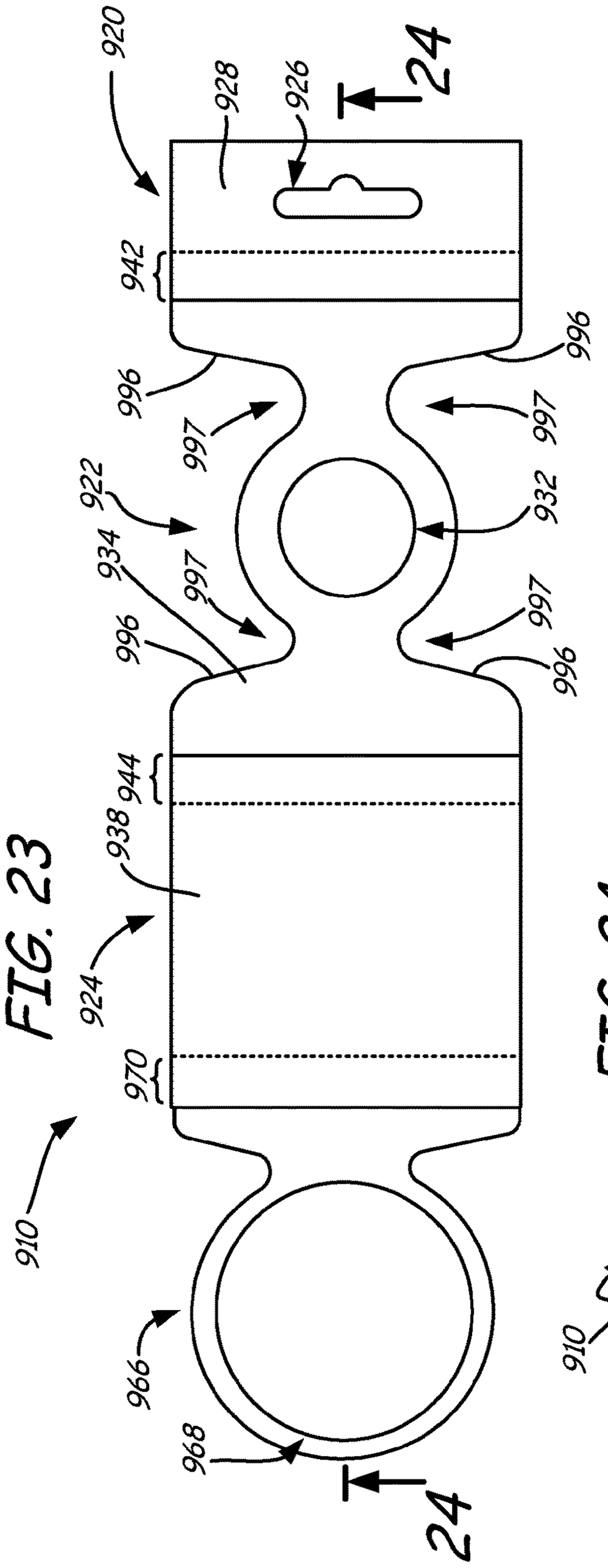
FIG. 22


920
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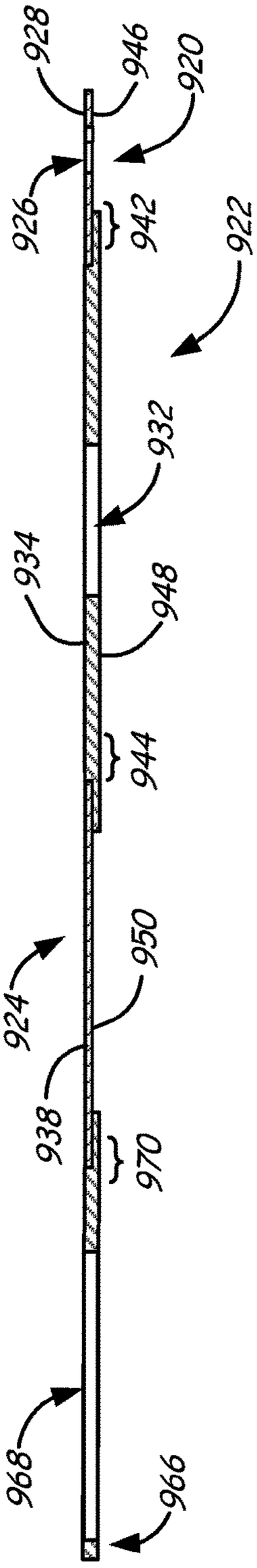
924
970
910
966
968
24

FIG. 23


928
946
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948
944
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950
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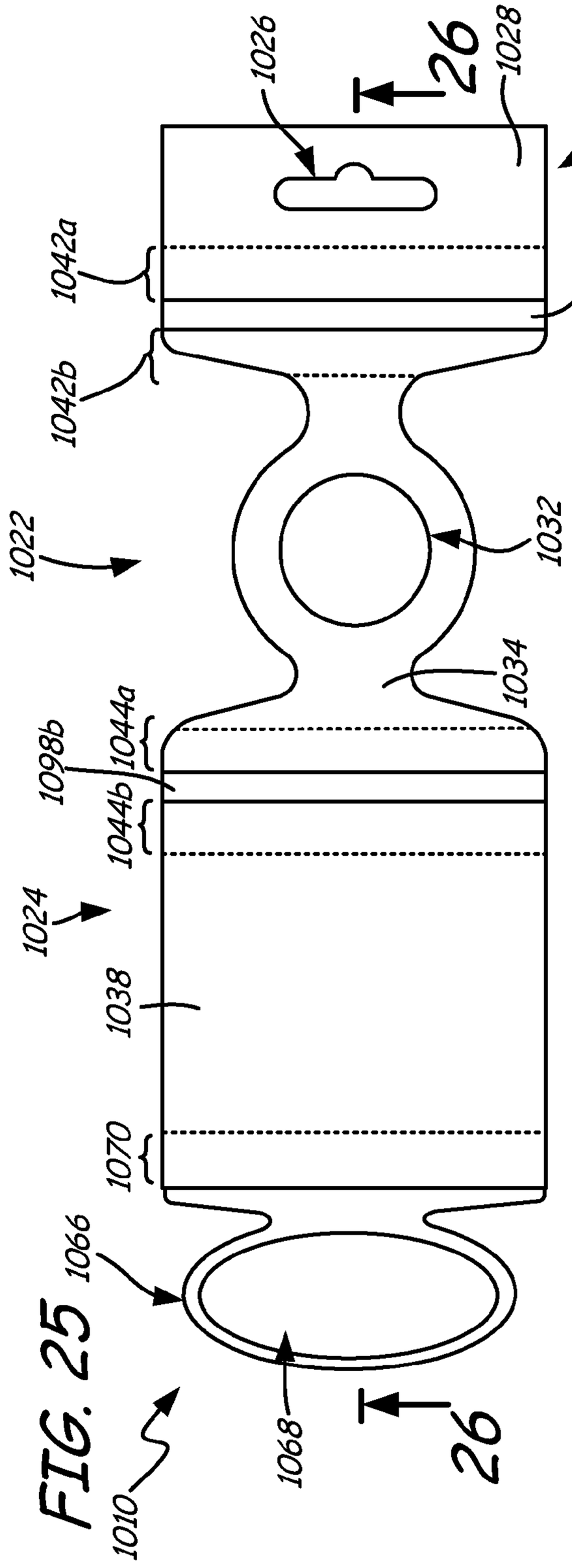
968
966

FIG. 24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1010
26

FIG. 25

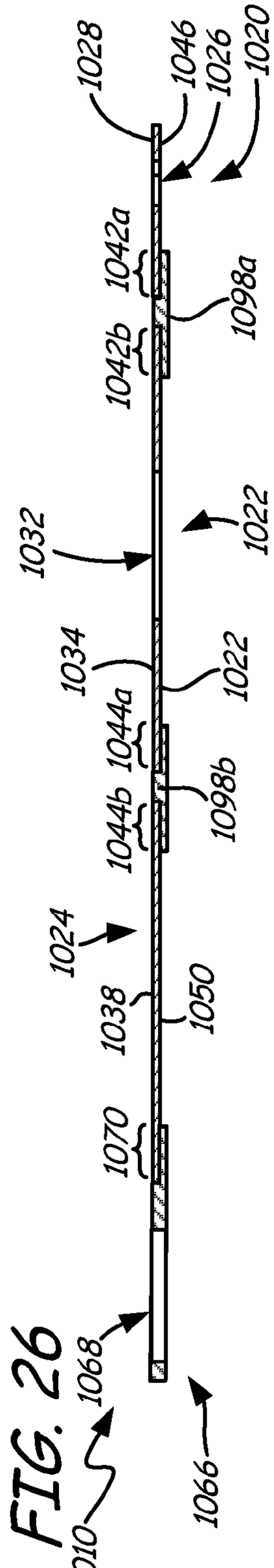
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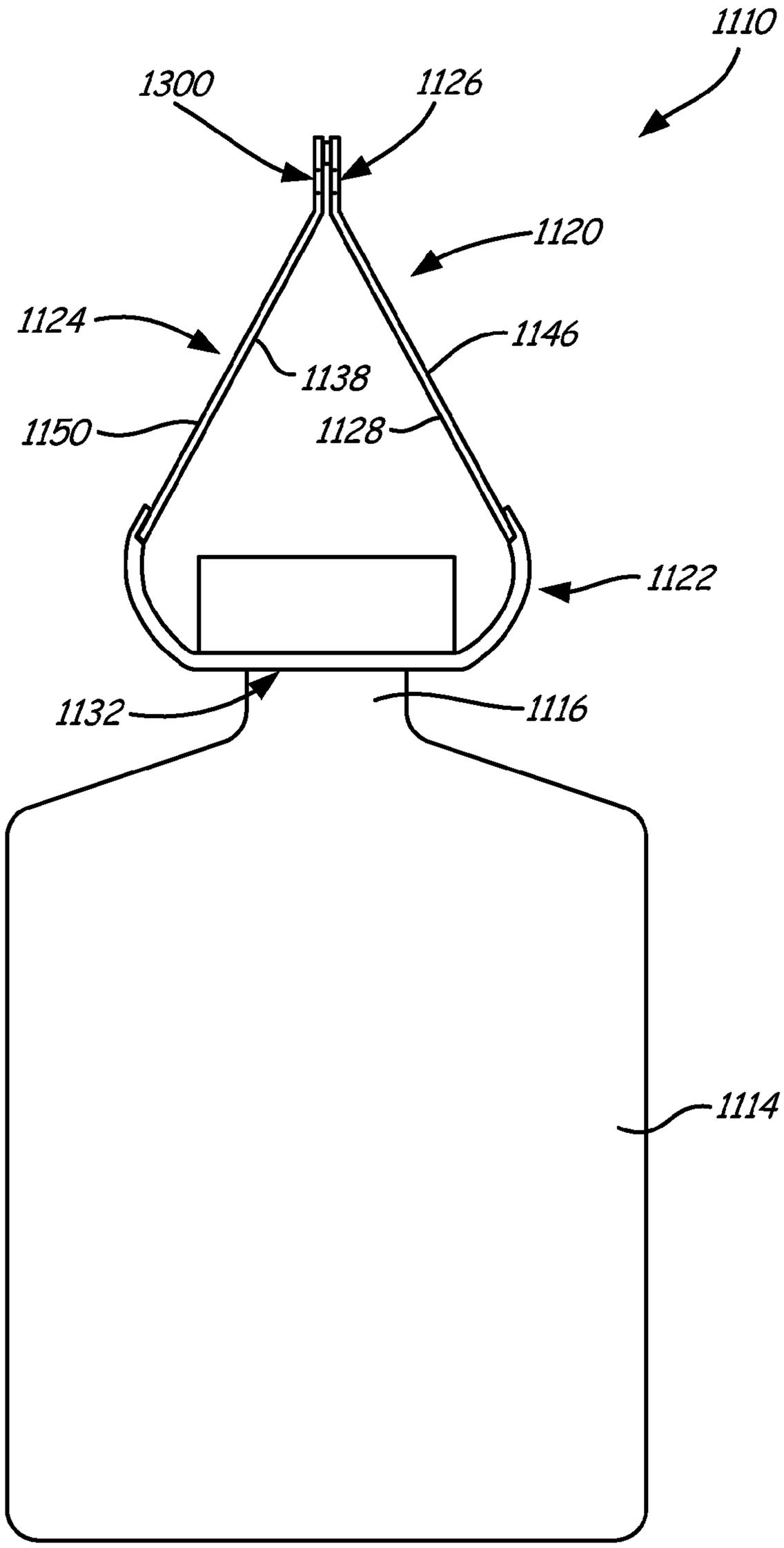
FIG. 26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1122
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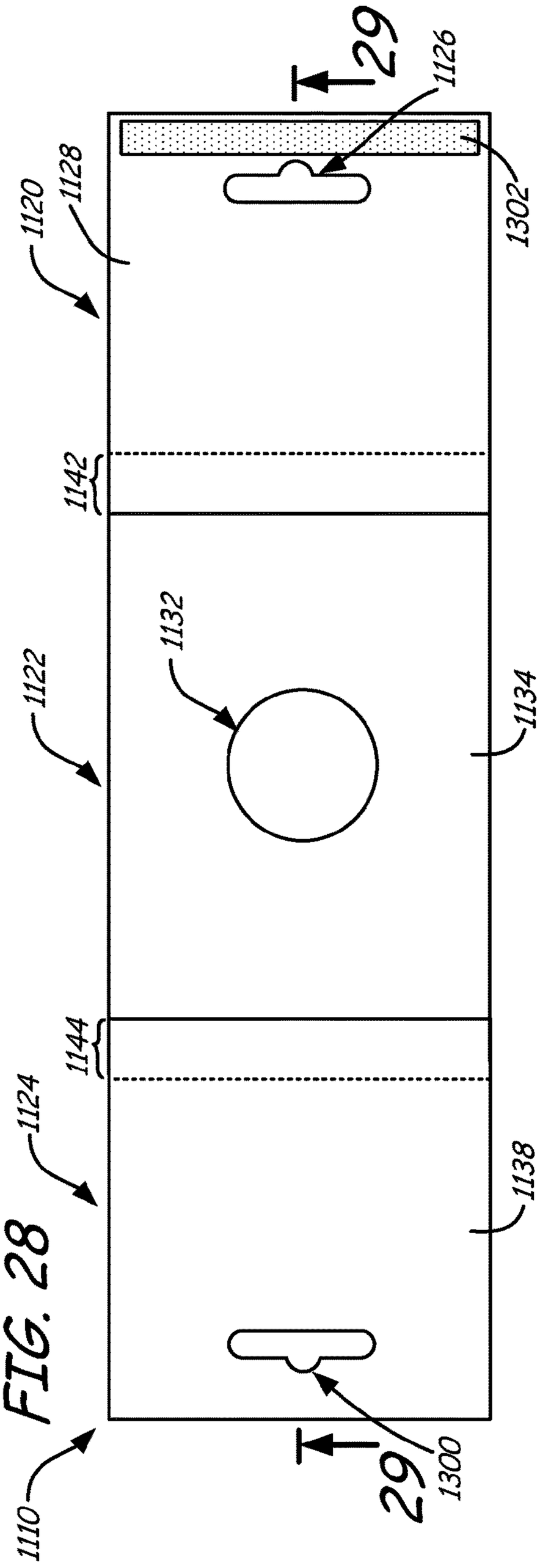
1116
1114

FIG. 27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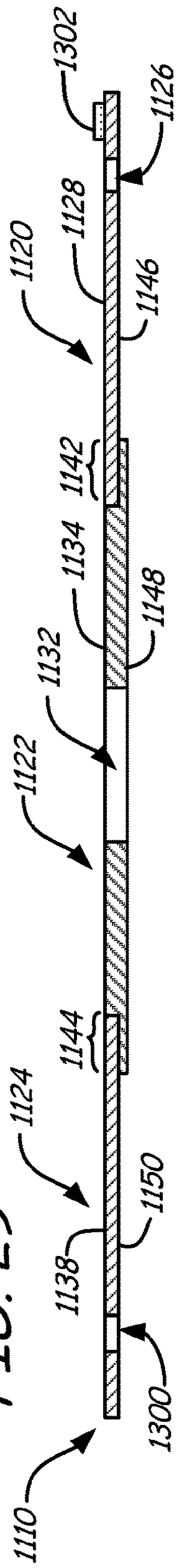
1110
29
1300

FIG. 28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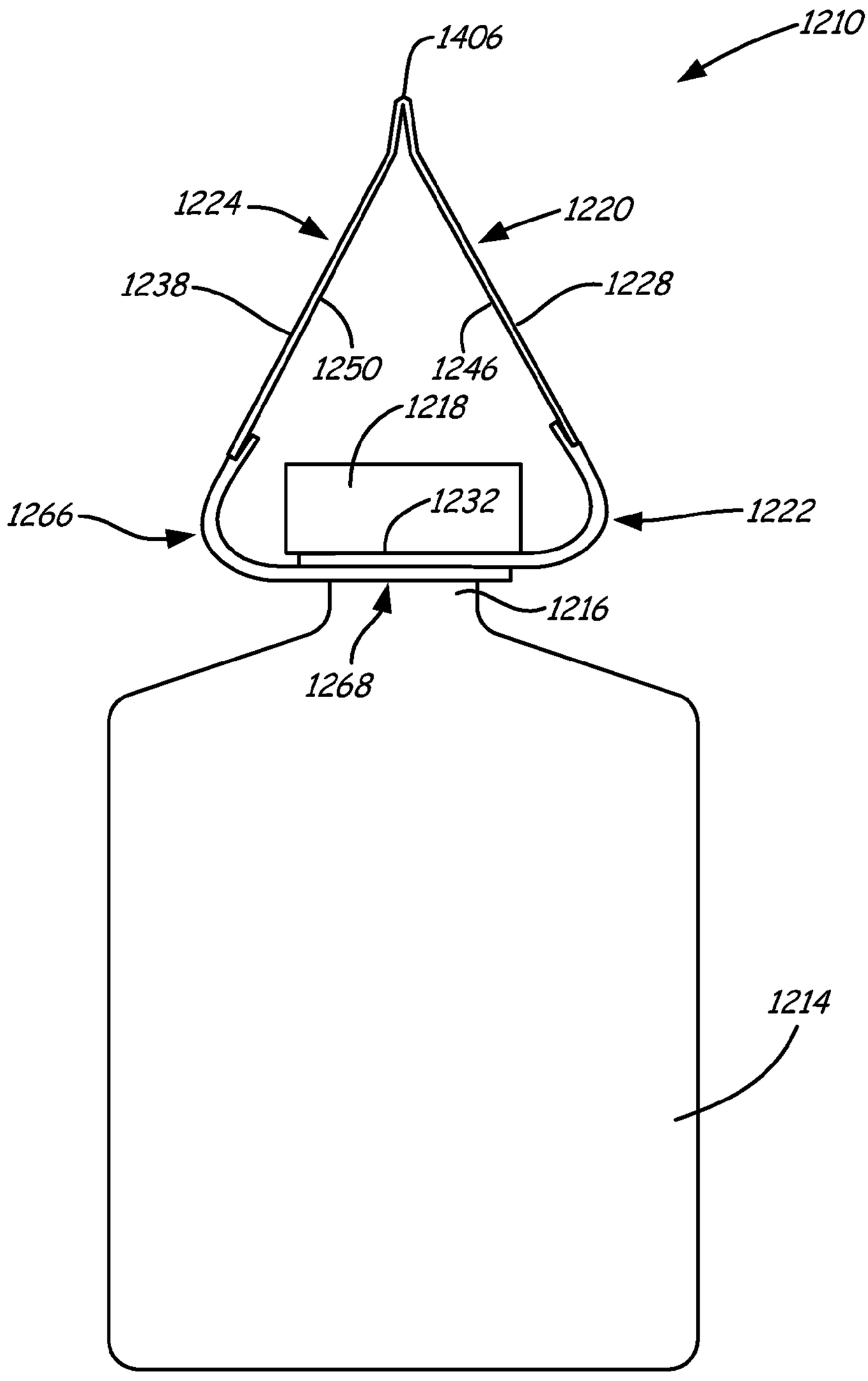
1138
1150
1110
1300

FIG. 29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1268
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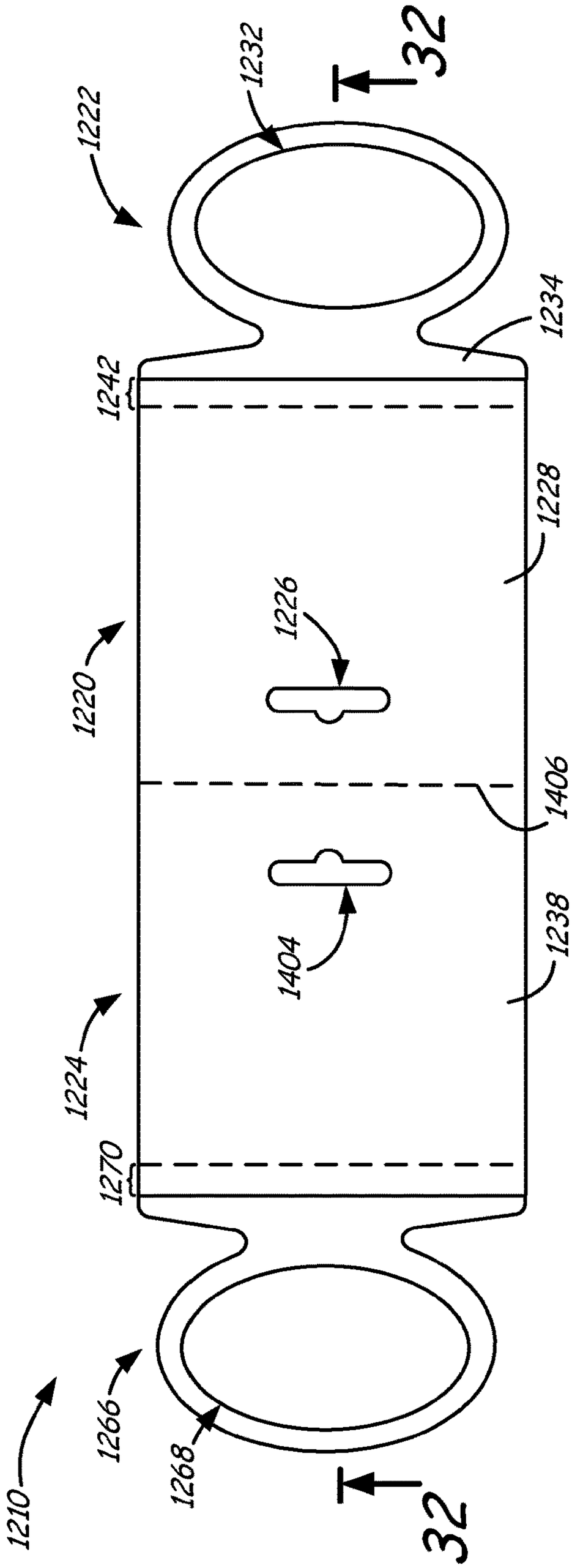
FIG. 30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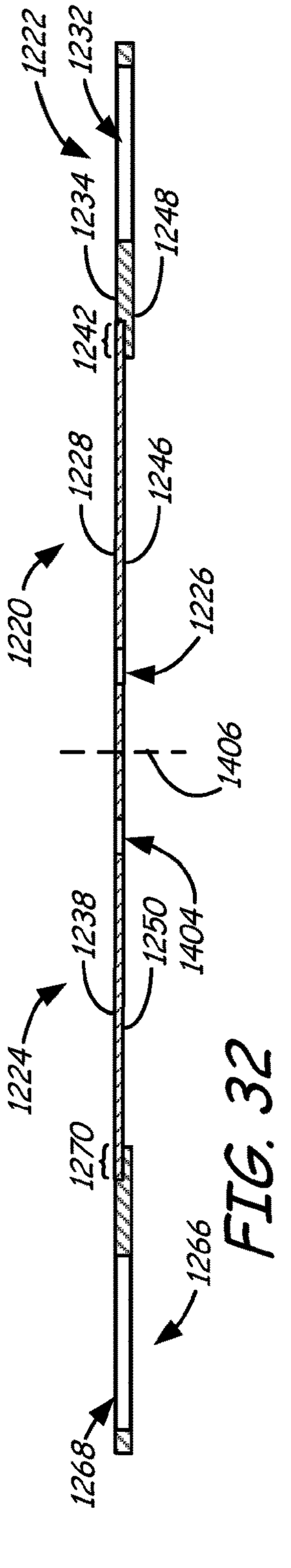
1224
1270
1266
1268
1210
32

FIG. 31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1242
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1246
1220
1226
1406
1238
1250
1404
1224
1270
1266
1268
1210
32

FIG. 32

HANG TAB AND PRODUCT TAG ASSEMBLY, AND METHOD OF USE

CROSS-REFERENCE TO RELATED APPLICATION(S)

The application is a continuation of U.S. patent application Ser. No. 15/479,711, filed on Apr. 5, 2017; which is a continuation of U.S. patent application Ser. No. 13/390,001, filed on Mar. 13, 2012, now U.S. Pat. No. 9,676,536; which is a section 371 U.S. National Phase Entry application from International patent application Ser. No. PCT/US10/45575, filed on Aug. 16, 2010; which claims the benefit of priority of U.S. Provisional Patent Application No. 61/234,050, filed on Aug. 14, 2009. These priority applications are hereby incorporated in their entireties.

BACKGROUND

The present disclosure is directed product display devices. In particular, the present disclosure is directed to devices for suspending and displaying products from retention mechanisms, such as retail display hooks or inventory storage.

In the product retail environment, products are often displayed for sale while mounted on hooks or rods. The product packaging or display component attached to the product has a hook or aperture that engages a generally horizontally disposed rod or a hook. Multiple units of a product may be displayed on a single rod, depending upon the length of the rod. Such arrangements are also useful for item storage and/or placement in other environments in addition to retail display and sale environments such as, for example, high-density item storage (while still allowing easy and ready retrieval of individual items).

The portion of the product or its packaging that engages the rod or hook is typically referred to as a hang tab. In order to reduce the cost of a product to the consumer, it is desirable to minimize excess packaging if possible. For example, if the product is sold in bottle form, product identification information, product use information, product source information and/or other indicia may be printed on the bottle or on labels attached to the bottle. Thus, a box for containing the bottle may be considered to be excess packaging, and will add to the end cost of the product. In that instance, however, the box may incorporate or have adhered to it a hang tab structure which facilitates display for sale of that bottle product on a rod.

SUMMARY

This Summary is provided to introduce a selection of concepts in a simplified form that are further described below in the Detailed Description. This summary is not intended to identify key features or essential features of the claimed subject matter, is not intended to describe each disclosed embodiment or every implementation of the claimed subject matter, and is not intended to be used as an aid in determining the scope of the claimed subject matter. Many other novel advantages, features, and relationships will become apparent as this description proceeds. The figures and the description that follow more particularly exemplify illustrative embodiments.

An aspect of the present disclosure is directed to a hang tab and product tag assembly that includes a first panel having an aperture configured to engage with a retention mechanism, a second panel operably secured to the first panel, and a third panel operably secured to the second panel. The second panel includes an aperture that is configured to adjust to different dimensions.

Another aspect of the disclosure is directed to a hang tab and product tag assembly. The assembly includes a first panel having an aperture configured to engage with a retention mechanism, and a second panel configured to extend at an angle from the first panel. At least a portion of the second panel compositionally comprises an elastic material, where the portion of the elastic material defines an aperture through the second panel. The assembly also includes a third panel configured to extend at an angle from the second panel. The third panel includes a surface comprising information selected from the group consisting of textual indicia, illustrative indicia, tactile information, machine readable information, and combinations thereof.

A further aspect of the disclosure is directed to a method for displaying an item. The method includes providing an assembly comprising a first panel, a second panel, and a third panel, where the first panel and the second panel each have an aperture. The method also includes inserting at least a portion of the item through the aperture of the second panel, and allowing the aperture of the second panel to conform to dimensions of the portion of the item inserted through the aperture of the second panel. The method further includes inserting at least a portion of a retention mechanism through the aperture of the first panel, and suspending the first panel from the retention mechanism such that the first panel extends at a first angle relative to the second panel, and such that the second panel extends at a second angle relative to the third panel.

BRIEF DESCRIPTION OF THE DRAWINGS

The disclosed subject matter will be further explained with reference to the attached figures, wherein like structure is referred to by like reference numerals throughout the several views.

FIG. **1** is an isometric illustration of a hang tab and product tag assembly of the present disclosure, where the assembly is secured to a bottle and suspended from a hook for display.

FIG. **2** is a top plan view of the assembly, prior to being mounted on an item.

FIG. **3** is a sectional view of the assembly as taken along section lines **3-3** in FIG. **2**.

FIG. **3**A is a top plan view of a sheet of multiple assemblies, illustrating a technique for manufacturing the assemblies.

FIG. **4** is a side elevational view of a first alternative embodiment of the assembly, which includes a product tag panel having a foldable-tag design.

FIG. **5** is an isometric illustration of a second alternative embodiment of the assembly, where the second alternative assembly is secured to a bottle and suspended from a hook for display, and where the second embodied assembly includes a hang tab panel that is integrally formed with an aperture panel of the assembly.

FIG. **6** is a top plan view of the second alternative assembly.

FIG. **7** is a sectional view of the second alternative assembly as taken along section lines **7-7** in FIG. **6**.

FIG. **8** is an isometric illustration of a third alternative embodiment of the assembly, where the third alternative assembly is secured to a bottle and suspended from a hook for display, and where the third embodied assembly includes an aperture panel having an elastic region surrounded by a non-elastic border.

FIG. **9** is a top plan view of the third alternative assembly.

FIG. **10** is a sectional view of the third alternative assembly as taken along section lines **10-10** in FIG. **9**.

FIG. **11** is an isometric illustration of a fourth alternative embodiment of the assembly, where the fourth alternative assembly is secured to a bottle and suspended from a hook for display, and where the fourth embodied assembly includes a lower aperture panel.

FIG. **12** is a top plan view of the fourth alternative assembly.

FIG. **13** is a sectional view of the fourth alternative assembly as taken along section lines **13-13** in FIG. **12**.

FIG. **14** is an isometric illustration of a fifth alternative embodiment of the assembly, where the fifth alternative assembly is secured to a bottle and suspended from a hook for display, and where the fifth embodied assembly includes a lower aperture panel and a foldable carrier secured to a product tag panel of the assembly.

FIG. **15** is a side elevational view of the fifth alternative assembly.

FIG. **16** is an isometric illustration of the foldable carrier of the fifth alternative assembly in use with a sample product, where the foldable carrier is in a partially-folded arrangement.

FIG. **17** is a top plan view of an alternative foldable carrier of the fifth alternative assembly, where the alternative foldable carrier is in an unfolded arrangement.

FIG. **18** is a side view of a sixth alternative embodiment of the assembly, where the sixth alternative assembly is secured to a screwdriver-type product and suspended from a hook for display, and where the sixth embodied assembly includes a hang tab panel that is integrally formed with a product tag panel of the assembly in a foldable arrangement.

FIG. **19** is a top plan view of the sixth alternative assembly.

FIG. **20** is a sectional view of the sixth alternative assembly as taken along section lines **20-20** in FIG. **19**.

FIG. **21** is a top plan view of a seventh alternative embodiment of the assembly, where the seventh embodied assembly includes an aperture panel having shoulders defined by neck indentations.

FIG. **22** is a top plan view of an eighth alternative embodiment of the assembly, where the eighth embodied assembly includes an aperture panel having shoulders defined by neck indentations, and also includes a lower aperture panel.

FIG. **23** is a top plan view of a ninth alternative embodiment of the assembly, where the ninth embodied assembly includes a thermosensitive aperture panel.

FIG. **24** is a sectional view of the ninth alternative assembly as taken along section lines **24-24** in FIG. **23**.

FIG. **25** is a top plan view of a tenth alternative embodiment of the assembly, where the tenth embodied assembly includes a thermosensitive aperture panel, and also includes additional elastic bridge panels.

FIG. **26** is a sectional view of the tenth alternative assembly as taken along section lines **26-26** in FIG. **25**.

FIG. **27** is a side view of an eleventh alternative embodiment of the assembly, where the eleventh alternative assembly is secured to a bottle and suspended from a hook for display, and where the eleventh embodied assembly includes a foldable arrangement in which a hang tab panel and a product tag panel are secured to together.

FIG. **28** is a top plan view of the eleventh alternative assembly.

FIG. **29** is a sectional view of the eleventh alternative assembly as taken along section lines **29-29** in FIG. **28**.

FIG. **30** is a side view of a twelfth alternative embodiment of the assembly, where the twelfth alternative assembly is secured to a bottle and suspended from a hook for display, and where the twelfth embodied assembly includes a foldable arrangement in which elastic panels are secured to together.

FIG. **31** is a top plan view of the twelfth alternative assembly.

FIG. **32** is a sectional view of the twelfth alternative assembly as taken along section lines **32-32** in FIG. **31**.

Although the above-identified figures set forth various features of the disclosed subject matter, other combinations of features are also contemplated, as noted in the disclosure. In all cases, this disclosure presents the disclosed subject matter by way of representation and not limitation. It should be understood that numerous other modifications and feature combinations can be devised by those skilled in the art which fall within the scope and spirit of the principles of this disclosure. It should be understood that the figures have not been drawn to scale as it has been necessary to enlarge certain portions for clarity of illustration.

DETAILED DESCRIPTION

The present disclosure is directed to a hang tab and product tab assembly, where a first panel of the assembly is configured to serve and a hang tab, and one or more second panels of the assembly serve to secure the assembly to a product (e.g., a bottle or item in other form), and one or more thirds panels of the assembly may serve as information or indicia bearing portions. This combination allows the assembly and the secured product to be suspended from a retention mechanism (e.g., a retail shelf hook). The combination also reduces product packaging requirements and provides advertising and/or information relative to a product, its use, or related products or promotions. As discussed below, the characteristics of elastic materials (and other bonding techniques) may be used to conform the assembly to irregularly shaped products, and can be used on a wide variety of products.

FIGS. **1-3** illustrate one embodiment of the hang tab and product tag assembly of the present disclosure, referred to as assembly **10**. As shown in FIG. **1**, assembly **10** is suspended from hook **12** (shown with dashed lines) and is secured around bottle **14**, where bottle **14** includes neck **16** and cap **18**. Assembly **10** includes hang tab panel **20**, aperture panel **22**, and product tag panel **24**, where aperture panel **22** interconnects hang tab panel **20** and product tag panel **24**, and provides a suitable location for securing bottle **14** to assembly **10**. The term "panel", such as for hang tab panel **20**, aperture panel **22**, and product tag panel **24**, is used herein to distinguish the different components of the assemblies of the present disclosure, and is not intended to limit the components to particular geometries or functions. In other words, a "panel" is not limited to a generally sheet-like structure or to any particular shape, but may include three-dimensional features.

Hang tab panel **20** includes aperture **26** for engaging with hook **12** or any other suitable retention mechanism, where the dimensions of aperture **26** may vary depending on the desired retention mechanism. Hang tab panel **20** may be derived from one or more paper, polymeric, metallic, organic, and/or fabric materials. Suitable materials for hang tab panel **20** include those recited for the tag portions in Ludlow et al., U.S. Pat. No. 7,281,345 and Ludlow et al., International Application Publication No. WO07/084119, the contents of each of which are incorporated by reference

in their entireties. For example, hang tab panel **20** may be derived from one or more printable card materials, such as materials commercially available under the trade designation "TESLIN" from PPG Industries, Pittsburgh, Pa. In one embodiment, hang tab panel **20** is formed at least in part from biodegradable, degradable, or recyclable materials.

In some embodiments, hang tab panel **20** is substantially inextensible (i.e., non-stretchable) and rigid to engage hook **12** without deformation. Hang tab panel **20** also includes front surface **28**, which may include textual indicia (e.g., indicia **30**), illustrative indicia, and/or a visible or otherwise detectable (e.g., tactile, machine readable, etc.) presentation of information.

Aperture panel **22** includes aperture **32**, which is configured to retain products, such as bottle **14**. Aperture panel **22** may be fabricated from one or more flexible, elastic materials, such as one or more elastomer materials. This allows hang tab panel **22** to project upwardly from aperture panel **22**, at an angle relative to aperture panel **22**, for engagement with hook **12** or any other suitable retention mechanism. The flexibility of aperture panel **22** also allows product tag panel **24** to hang downwardly relative to the product being displayed (e.g., bottle **14**), and at an angle relative to aperture panel **22**. Examples of suitable materials for aperture panel **22** include those recited for the flexible elastic portions disclosed in Ludlow et al., U.S. Pat. No. 7,281,345 and Ludlow et al., International Application Publication No. WO07/084119 (e.g., elastomer materials). In one embodiment, aperture panel **22** is formed at least in part from biodegradable, degradable, or recyclable materials.

The dimensions (e.g., diameter) of aperture **32** desirably allow assembly **10** to be affirmatively retained to the intended product, such as bottle **14**. In one embodiment, the dimensions of aperture **32** are smaller than the cross-sectional area of the intended product, or is otherwise configured to deform or otherwise adjust in response to the shape of the intended product for insertion and removal of the product. For example, the diameter of aperture **32** is desirably smaller than the cross-sectional area of neck **16** and cap **18** of bottle **14**. As such, bottle **14** may be retained to assembly **10** by inserting cap **18** and neck **16** through aperture **32** of aperture panel **22**, thereby stretching the elastic material of aperture panel **22** from a relaxed state to a stretched state. When neck **16** is disposed through aperture **32**, the elastic material of aperture panel **22**, at least in the region adjacent to aperture **32**, remains in the stretched state such that aperture **32** conforms to the dimensions of neck **16**. This secures neck **16** within aperture **32** due to frictional resistance and/or due to the larger dimensions of cap **18**.

Assembly **10** is also desirably removable from the product (e.g., bottle **14**), such as when the product has been sold or removed from storage. To remove assembly **10** from bottle **14**, assembly **10** and bottle **14** may be pulled in opposing directions to surpass the resistive force of aperture **32** around neck **16** and cap **18**. In other words, assembly **10** may be removed from bottle **14** by pulling neck **16** and cap **18** out of aperture **32**.

In some embodiments, the elastic material of aperture panel **22** may be "tuned" to the weight and shape of the product to be retained therein. For example, the elastic material of aperture panel **22** may be formed with increased rigidity for item theft protection and permanence of mounting of assembly **10** on the product. This may reduce the ease of removal of assembly **10** from the product, or may prevent removal of assembly **10** from the product without at least partial destruction of assembly **10** or of the product.

Aperture panel **22** also includes front surface **34**, which may include textual indicia (e.g., indicia **36**), illustrative indicia, and/or a visible or otherwise detectable (e.g., tactile, machine readable, etc.) presentation of information. Aperture panel **22** may take a variety of forms, so long as it serves to define aperture **32** for engaging a product. For instance, aperture panel **22** may, in some embodiments, be formed to attain desired properties for display of product tag panel **24** and/or indicia **36**, such as to allow product tag panel **24** to hang straight relative to the product, or to be more eye-catching to a consumer/user by hanging at an angle relative to the product, by projecting outwardly from the product, or by being easily moved relative to the product (such as even by a gust of air).

In other embodiments, aperture panel **22** may be formed to allow itself and product tag panel **24** to conform to an irregularly-shaped item, or to allow aperture panel **22** (once disposed about a portion of the product) to assume a desired configuration (e.g., the shape of a bow-tie, a particular letter or number, a semaphore or a baseball glove), either alone or in combination with product tag panel **24** and/or hang tab panel **22**. Aperture panel **22** may also be formed to have multiple apertures **32** for supporting a product (or a plurality of products) on a single assembly **10**.

Product tag panel **24** may be derived from one or more paper, polymeric, metallic, organic, and/or fabric materials. Suitable materials for product tag panel **24** include those discussed above for hang tab panel **20**. For example, in some embodiments, product tag panel **24** is substantially inextensible (i.e., non-stretchable) and rigid. This allows printing on front surface **38** to provide textual indicia (e.g., indicia **40**), illustrative indicia, and/or a visible or otherwise detectable (e.g., tactile, machine readable, etc.) presentation of information.

In one embodiment, product tag panel **24** is formed at least in part from biodegradable, degradable, or recyclable materials. Accordingly, assembly **10** (any the below-discussed alternative assemblies) may aid in recycling. In the embodiments in which hang tab panel **20**, aperture panel **22**, and product tag panel **24** are formed at least in part from recyclable materials, after use, aperture panel **22** may be separated from hang tab panel **20** and product tag panel **24** and recycled as separate materials.

In one embodiment, a rear surface of product tag panel **24** (not shown in FIG. **1**) may be bonded (e.g., by pressure sensitive adhesive or some other suitable bonding agent) to the product, such as to the body of bottle **14**. In this embodiment, a layer of the bonding material (e.g., a pressure sensitive adhesive) may be provided on one or more portions of the rear surface of product tag panel **24**. Additionally, the rear surface of product tag panel **24** may also include a release liner disposed over the bonding material, where the release liner may be removed prior to the fixation of assembly **10** onto the product, such as bottle **14**.

As shown in FIG. **1**, hang tab panel **20** and aperture panel **22** together perform support functions for bottle **14** (from hook **12**). In this embodiment, product tag panel **24** does not perform a support function, and is suitable for displaying information on front surface **38** (e.g., indicia **40**). During use, neck **16** and cap **18** of bottle **14** may be inserted through aperture **32** of aperture panel **22** to secure bottle **14** to assembly **10**. Hang tab panel **20** may then be mounted on to hook **12** with aperture **26** to suspend assembly **10** and bottle **14** from hook **12**. While suspended from hook **12**, indicia or other information printed on one or more of front surfaces **28**, **34**, and **38** (e.g., indicia **30**, **36**, and **40**) may then be prominently displayed. For example, front surface **28** of

hang tab panel **20** and front surface **38** of product tag panel **24** are suitable for displaying information relating to bottle **14**, such as brand logos, product identification, price information, universal product codes, and the like. As such, assembly **10** is a convenient and effective system for retaining and displaying products, such as bottle **14**.

As shown in FIG. **2**, aperture panel **22** is bonded to hang tab panel **20** at bond zone **42**, and is bonded to product tag panel **24** at bond zone **44**. Furthermore, hang tab panel **20**, aperture panel **22**, and product tag panel **24** are each illustrated as having rectangular geometries. In alternative embodiments, one or more of hang tab panel **20**, aperture panel **22**, and product tag panel **24** may be formed with any suitable geometry, so long as their purposes as explained above are retained, and there is suitable overlap of material in the respective bond zones **42** and **44** to define appropriate and reliable bonds therebetween. Likewise apertures **26** and **32** may be formed in any desired shape, so long as their respective functions are not compromised.

As shown in FIG. **3**, hang tab panel **20** is flatly conjoined with aperture panel **22** along bond zone **42**. In other words, hang tab panel **20** and aperture panel **22** are joined so that the sheet character of one of the panels extends into the sheet character of the other panel, giving a sheet-like character to the assembled panels. The result is a unifying flat bond zone **42** at the conjoining of hang tab panel **20** and aperture panel **22**.

Similarly, product tag panel **24** is flatly conjoined with aperture panel **22** along bond zone **44**. In other words, product tag panel **24** and aperture panel **22** are joined so that the sheet character of one of the panels extends into the sheet character of the other panel, giving a sheet-like character to the assembled panels. The result is a unifying flat bond zone **44** at the conjoining of aperture panel **22** and product tag panel **24**.

As further shown in FIG. **3**, hang tab panel **20**, aperture panel **22**, and product tag panel **24** respectively include rear surfaces **46**, **48**, and **50**, which are the respective opposing surfaces to front surfaces **26**, **34**, and **38**. In some embodiments, one or more of rear surfaces **46**, **48**, and **50** may include textual indicia, illustrative indicia, and/or a visible or otherwise detectable (e.g., tactile, machine readable, etc.) presentation of information.

Prior to affixation to a product, such as bottle **14** (shown in FIG. **1**), assembly **10** exhibits sheet-like dimensions in the sense that hang tab panel **20**, aperture panel **22**, and product tag panel **24** are each of flat character and are generally co-planar. In some embodiments, depending on the composition and film thickness, aperture panel **22** may be drapeable and floppy and thus not always displayed in flat form due to the elastic material(s).

As discussed above, in the shown embodiment, hang tab panel **20** and aperture panel **22** together perform support functions for bottle **14**, and product tag panel **24** does not perform a support function. Accordingly, in some embodiments, hang tab panel **20** may be fabricated from thicker and/or more rigid materials compared to the dimensions and materials of product tag panel **24**. Furthermore, for the same reason, in some embodiments, bond zone **42** between hang tab panel **20** and aperture panel **22** may exhibit a greater bond strength (e.g., via a greater bonding surface area) compared to the bond strength of bond zone **44** between aperture panel **22** and product tag panel **24**.

FIG. **3**A illustrates sheet **10***a*, which is a manufactured sheet that includes multiple assemblies **10**. Assembly **10** may be manufactured using a variety of different techniques. Examples of suitable techniques for manufacturing assembly **10** include those disclosed in Ludlow et al., U.S. Pat. No. 7,281,345 and Ludlow et al., International Application Publication No. WO07/084119. For example, as shown in FIG. **3**A, a sheet of multiple assemblies **10** (e.g., sheet **10***a*) may be manufactured using a continuous web-based process, where adjacent assemblies **10** may be separable with score or perforation lines **51**.

In this embodiment, a strip of tab material for the hang tab panels **20** (referred to as hang tab strip **20***a*) and a strip of tag material for the product tag panels **24** (referred to as product tag strip **24***a*) may advance in the direction of arrow A, and may be aligned with an advancing strip of elastic material for the aperture panels **22** (referred to as intermediate strip **22***a*). Strips **20***a*, **22***a*, and **24***a* may then be bonded together at bond zone areas **42***a* and **44***a*, which correspond to bond zones **42** and **44** for each assembly **10**. Strips **20***a*, **22***a*, and **24***a* may be bonded together using a variety of different bonding techniques, such as thermal bonding, adhesive bonding, ultrasonic bonding, and the like. Examples of suitable bonding techniques are disclosed in Maltas et al., U.S. Pat. No. 7,763,135.

In some embodiments, hang tab strip **20***a* and/or product tag strip **24***a* may have indicia or other information already applied prior to the bonding step. Alternatively, after the bonding of strips **20***a*, **22***a*, and **24***a*, indicia or other information may be printed to one or more of the strips **20***a*, **22***a*, and **24***a*. Since hang tab strip **20***a* and product tag strip **24***a* are provided as separate strips, proper alignment and registration of hang tab strip **20***a* and product tag strip **24***a* are desired to reduce the risk of printing errors. Score or perforation lines **51** may then be formed in the advancing sheet **10***a* to define the separable assemblies **10**, and apertures **26** and **32** may be cut out of the advancing sheet for each assembly **10**. Likewise, other shaping or processing of the bonded strips **20***a*, **22***a*, and **24***a* may be accomplished. After the manufacturing process is complete, the individual assemblies **10** may be separated for individual use, or maintained in sheet or roll form for bulk shipping and subsequent use.

FIGS. **4-32** illustrate examples of suitable alternative hang tab and product tag assemblies of the present disclosure, where indicia corresponding to indicia **30**, **36**, and **40** are omitted for ease of discussion. As discussed below, the features of each alternative assembly may be interchangeable with any of the assemblies discussed herein, so long as their intended functions are not compromised.

Furthermore, each of the below-discussed assemblies may be manufactured using similar processes to that discussed above for sheet **10***a* (shown in FIG. **3**A), where particular differences in the manufacturing process for a given alternative assembly are noted below. For example, in some embodiments, the hang tab strips and/or product tag strips may have indicia or other information already applied prior to the bonding step. Alternatively, after the bonding of the strips, indicia or other information may be printed to one or more of the strips. In some of the embodiments, the hang tab strips and product tag strips are provided as separate strips. In these embodiments, proper alignment and registration of the hang tab strip, the aperture strips, and/or the product tag strips are desired to reduce the risk of printing errors.

In each of the below-discussed assemblies, the panels are desirably joined so that the sheet character of at least a portion of one of the panels extends into the sheet character of at least a portion of the other panel, giving a sheet-like character to the assembled panels, at least adjacent to their respective bond zones. This desirably results in unifying flat bond zones at the conjoining of adjacent panels, as discussed

above for assembly **10** (shown in FIGS. **1-3**A). As such, prior to affixation to products, each alternative assembly desirably exhibits sheet-like dimensions in the sense that the panels (at least where bonded together) are each of flat character and are generally co-planar. In some embodiments, depending on the compositions and film thicknesses, panels derived from elastic materials may be drapeable and floppy and thus not always displayed in flat form due to the elastic materials.

FIG. **4** is a side elevational view of assembly **110**, which is a first alternative to assembly **10** (shown in FIGS. **1-3**A), and where the respective reference labels are increased by "100". In the embodiment shown in FIG. **4**, assembly **110** includes product tag panel **124** having a foldable-tag design. Product tag panel **124** is formed from a folded-over panel assembly having front panel **152** (defining front surface **138**) and rear panel **154** (defining rear surface **150**), where front panel **152** and rear panel **154** are connected together along a lateral hinge line **156**. Front panel **152** and rear panel **154** may be formed from the same sheet of panel material, which is folded over at hinge line **156**.

As illustrated in FIG. **4**, bond zone **144** between the aperture panel **122** and product tag panel **124** engages a portion of the rear panel **154**, as well as hinge line **156**. An example of suitable arrangement for bond zone **144** includes the tag to elastomer bonding arrangement disclosed in U.S. patent application Ser. No. 11/529,697, which is incorporated by reference in its entirety. Thus, product tag panel **124** includes more panel faces compared to product tag panel **24** (shown in FIGS. **1-3**A). This provides additional space for product advertisement, information and/or other indicia to be presented by assembly **110** relative to the product to which it may be mounted (e.g., bottle **14**, shown in FIG. **1**), and/or for the purpose of promoting related products and/or services.

Product tag panel **124** is illustrated as bi-fold tag as having two panels (i.e., front panel **152** and rear panel **154**). In alternative embodiments, product tag panel **124** may be a tri-fold tag having two folds and thus three panels. In additional alternative embodiments, product tag panel may have four or more folds and additional panels, as desired.

FIGS. **5-7** illustrate assembly **210**, which is a second alternative to assembly **10** (shown in FIGS. **1-3**A), and where the respective reference labels are increased by "200" relative to FIGS. **1-3**. As shown in FIG. **5**, assembly **210** includes hang tab panel **220** and aperture panel **222**, which are integrally fabricated from one or more elastic materials. Accordingly, in this embodiment, hang tab panel **220** is also derived from one or more elastic materials. Examples of suitable materials for hang tab panel **220** and aperture panel **222** include those discussed above for aperture panel **22** (shown in FIGS. **1-3**A).

The elastic material defining hang tab panel **220** and aperture panel **222** includes apertures **226** and **232**, which respectively function in the same manner as apertures **26** and **32** (shown in FIGS. **1-3**A) for suspending bottle **214** from hook **212**. During use, neck **216** and cap **218** of bottle **214** may be inserted through aperture **232** of aperture panel **222** to secure bottle **214** to assembly **210**. Hang tab panel **228** may then be mounted to hook **212** with aperture **226** to suspend to assembly **210** and bottle **214** from hook **212**. While suspended from hook **212**, indicia or other information printed on one or more of front surfaces **228**, **234**, and **238** may then be prominently displayed. For example, front surface **238** of product tag panel **224** is suitable for displaying information relating to bottle **214**.

As shown in FIGS. **6** and **7**, assembly **210** includes a single bond zone **244**, where the bond zone corresponding to bond zone **40** (shown in FIGS. **2** and **3**) is omitted. In this embodiment, the elastic material at hang tab panel **220** may be stiffened and/or hang tab panel **220** may exhibit a greater film thickness to allow hang tab panel **220** to function as a hang tab without undue deformation.

As discussed above, assembly **210** may be manufactured using a similar process to that discussed above for assembly **10** and sheet **10***a* (shown in FIG. **3**A). In this embodiment, however, a single strip of tag material for the product tag panels **224** may be aligned with and bonded to a strip of elastic material for the hang tab panels **220**/aperture panels **222**.

FIGS. **8-10** illustrate assembly **310**, which is a third alternative to assembly **10** (shown in FIGS. **1-3**A), and where the respective reference labels are increased by "300" relative to FIGS. **1-3**. As shown in FIG. **8**, assembly **310** includes hang tab panel **320**, aperture panel **322**, and product tag panel **324**, where aperture panel **322** includes border **358** and elastic region **360**.

Functionally, hang tab panel **320** and product tag panel **324** may provide the same advantages as the hang tab panels and product tag panels described above. However, in this embodiment, a single sheet of tab/tag material defines hang tab panel **320**, border **358** of aperture panel **322**, and product tab panel **324**. Accordingly, hang tab panel **320**, border **358** of aperture panel **358**, and product tag panel **324** may be fabricated from one or more paper, polymeric, metallic, organic, and/or fabric materials. Suitable materials for hang tab panel **320**, border **358** of aperture panel **358**, aperture panel **358**, and product tag panel **324** include those discussed above for hang tab panel **20** (shown in FIGS. **1-3**A).

Border **358** extends around and is secured to elastic region **360**, where elastic region **360** is fabricated from one or more elastic materials, and includes aperture **332**. Suitable materials for elastic region **360** include those discussed above for aperture panel **22** (shown in FIGS. **1-3**A). Accordingly, elastic region **360** is exposed through opening **361**, where opening **361** is the opening defined by border **358**.

In the embodiment shown in FIGS. **9** and **10**, elastic region **360** extends across opening **361** to be generally coextensive with top end **362** and bottom end **364** of aperture panel **322**. Terms designating orientation, such as "top", "bottom", "upper", "lower", and the like are used herein for ease of discussion, and are not intended to limit the assemblies of the present disclosure to any particular orientations of assembly or use.

Opening **361** is larger than the dimensions of aperture **332** and aperture **332** is spaced from inner edges of border **358**. Thus, the elastic material of elastic region **360** is provided completely around all sides of aperture **332** before elastic region **360** engages border **358**. At those areas where the elastic region **360** engages border **358**, elastic region **360** and border **358** may be bonded together along a bond zone. In one embodiment, the bond zone is coextensive with border **358** of aperture panel **322**, and thus generally rectangular.

Assembly **310** may be mounted upon a product, such as bottle **314** (shown in FIG. **8**), using aperture **322** in the manner as discussed above for assembly **10**. The tab/tag material may be scored, creased or otherwise formed (e.g., at top end **362**) to allow bending of hang tab panel **320** relative to aperture panel **322**. Similarly, the tab/tag material may be scored, creased or otherwise formed (e.g., at bottom end **364**) to allow bending of product tag panel **324** relative to aperture panel **322**.

Since the amount of tab/tag material is reduced in aperture panel **322**, the tab/tag material at border **358** may be flexible enough to allow bending of aperture panel **322** to thereby allow hang tab panel **320** and product tag panel **324** to be aligned at angles relative to aperture panel **322**, such as for forming an assembly arrangement like that discussed above for assembly **10**. Alternatively, the tab/tag material may include additional score lines or creases or be otherwise formed to allow ready bending along the lateral sides of border **358**, making aperture panel **322** more flexible to accommodate its desired mounting configuration upon a product, such as bottle **314**.

Assembly **310** may be manufactured using a similar process to that discussed above for assembly **10** and sheet **10***a* (shown in FIG. **3**A). However, assembly **310** allows hang tab panel **320** and product tag panel **324** to be formed from the same sheet of tab/tag material. This is advantageous for applying printing or other indicia to hang tab panel **322** and product tag panel **324**, since those panels will always be joined together with border **358** for alignment and registration purposes. As discussed above, such registration is desirably maintained when multiple panels are being assembled in a single hang tab and product tag assembly, such as assemblies **10** and **110**, particularly when multiple assemblies are formed in series or strip form, as discussed above (e.g., sheet **10***a*, shown in FIG. **3**A). In addition, the inclusion of the tab/tag material in border **358**, along with elastic region **360**, may be desired in some applications to add rigidity to assembly **310**.

FIGS. **11-13** illustrate assembly **410**, which is a fourth alternative to assembly **10** (shown in FIGS. **1-3**A), and where the respective reference labels are increased by "400" relative to FIGS. **1-3**. As shown in FIG. **11**, assembly **410** includes hang tab panel **420**, aperture panel **422**, and product tag panel **424**, which may function in the same manner as hang tab panel **20**, aperture panel **22**, and product tag panel **24** (shown in FIGS. **1-3**A).

Assembly **410** also includes lower aperture panel **466** bonded to the opposing end of product tag panel **424** from aperture panel **422**. Suitable materials for lower aperture panel **466** include those discussed above for aperture panel **22**, where lower aperture panel **446** includes aperture **468**. Accordingly, lower aperture panel **446** provides a second location for securing assembly **410** to a product, such as bottle **414**.

This second attachment location serves the function of more securely attaching the assembly **410** to a product, and also for aligning product tag panel **424** generally upright (or in some other desired orientation) relative to the product, as defined by the properties of aperture panel **422** and lower aperture panel **466**, and the respective positions of apertures **432** and **468**. Lower aperture panel **366** may also include textual indicia, illustrative indicia, and/or a visible or otherwise detectable (e.g., tactile, machine readable, etc.) presentation of information.

During use, neck **416** and cap **418** of bottle **414** may be inserted through aperture **432** of aperture panel **422**, and the body of bottle **414** may be inserted through aperture **468** of elastic panel **466**, thereby securing bottle **414** to assembly **410**. Hang tab panel **428** may then be mounted on hook **412** with aperture **426** to suspend to assembly **410** and bottle **414** from hook **412**. While suspended from hook **412**, indicia or other information printed on one or more of front surfaces **428**, **434**, and **438** may then be prominently displayed. For example, front surface **428** of hang tab panel **420** and front surface **438** of product tag panel **424** are suitable for displaying information relating to bottle **414**. As such, assembly **410** is also a convenient and effective system for retaining and displaying products, such as bottle **414**.

As shown in FIG. **12**, product tag panel **424** and elastic panel **466** are bonded together along bond zone **470**. Additionally, the dimensions of aperture **468** may vary based on the dimensions of the intended products to be secured. For example, in the shown embodiment, aperture **468** has a diameter that is greater than the diameter of aperture **432** to compensate for the differences in diameters between the body of bottle **414** and neck **416**.

Assembly **410** may also be manufactured using a similar process to that discussed above for assembly **10** and sheet **10***a* (shown in FIG. **3**A). In this embodiment, however, an additional strip of elastic material for the lower aperture panels **466** may be aligned with and bonded to tab material strip for the product tag panels **424**, thereby forming the bond zone **470** for each assembly **410**.

As discussed above, in alternative embodiments, the use of lower aperture panel **466** with aperture **468** may be combined with any of the alternative features discussed herein, so long as their intended functions are not compromised. For example, the use of lower aperture panel **466** with aperture **468** may be combined with the foldable-tag design of assembly **110** (shown in FIG. **4**), with the extended elastic material design of assembly **210** (shown in FIGS. **5-7**), and with the border/elastic region design of assembly **310** (shown in FIGS. **8-10**). The combination of the border/elastic region design of assembly **310** is particularly suitable for use with elastic panel **466** with aperture **468**, thereby providing assembly **310** an additional mechanism for being secured to a product.

FIGS. **14-17** illustrate assembly **510**, which is a fifth alternative to assembly **10** (shown in FIGS. **1-3**A), and where the respective reference labels are increased by "500" relative to FIGS. **1-3**. As shown in FIG. **14**, assembly **510** includes hang tab panel **520**, aperture panel **522**, product tag panel **524**, and lower aperture panel **566**, which may function in the same manner as hang tab panel **420**, aperture panel **422**, product tag panel **424**, and lower aperture panel **466** (shown in FIGS. **11-13**).

In this embodiment, product tag panel **524** also includes carrier **572**, which is a foldable sheet that includes front portion **574**, central portion **576**, and rear portion **578**. As shown, the top ends of front portion **574** and rear portion **578** of carrier **572** are secured together adjacent to aperture panel **522**, and their bottom ends are offset from each by central portion **576**. As discussed below, carrier **572** is suitable for bearing items, such as product samples and the like, thereby allowing such items to be retained with the products secured to assembly **510** (e.g., bottle **514**).

As shown in FIG. **15**, prior to being used with bottle **514** (shown in FIG. **14**), front portion **574**, central portion **576**, and rear portion **578** of carrier **572** may extend in an unfolded and flat arrangement. As further shown, rear portion **578** of carrier **572** is secured to product tag panel **524** at lateral hinge line **580**. Bond zone **544** between the aperture panel **522** and product tag panel **524**/carrier **572** engages a portion of product tag panel **524**, as well as hinge line **580**, in the same manner as discussed above for assembly **110** (shown in FIG. **4**). As such, carrier **572** and product tag panel **524** may be formed from the same sheet of panel material, which is folded over at hinge line **580** in the same manner as discussed above for assembly **110**.

In FIG. **16**, carrier **572** is shown in a partially-folded arrangement. Front portion **574** and central portion **576** are foldable along crease or fold line **582***a*, and central portion **576** and rear portion **578** are foldable along crease or fold

line **582***b*. Carrier **572** also includes longitudinal slits therethrough normal to fold lines **582***a* and **582***b* that define flap **584**. As shown, when carrier **572** is folded, flap **584** may extend outward to receive a product sample (e.g., sample **586**).

As further shown, rear portion **578** includes adhesive band **588**, which is a band of one or more adhesive materials (e.g., one or more pressure sensitive adhesives). When carrier **572** is folded to the arrangement shown in FIG. **14**, front portion **574** may engage adhesive band **588**, thereby retaining carrier **572** in that folded arrangement. This folded arrangement also allows flap **584** to be formed for use in retaining product samples, such as sample **586**. In an alternative embodiment, an adhesive band may be retained on front portion **574** in lieu of, or in addition to, adhesive band **588**.

FIG. **17** illustrates an alternative sample-retention arrangement for carrier **572**, referred to as carrier **572***a*, which includes outer flaps **584***a* and **584***b*, and inner flap **584***c*. Flaps **584***a*-**584***c* are defined by slits **590**, which are longitudinal slits that extend normal to fold lines **582***a* and **582***b*. In the illustrated embodiment, each slit **590** has a lower end at fold line **582***a*. The inner pair of slits **590** have top ends that extend past fold line **582***b*, are of the same length, and that may have a lateral crease or fold line **592***a* extending therebetween at the top ends. The outer pair of slits **590** also have top ends that extend past fold line **582***b*, are of the same length (longer in this embodiment than the inner pair of slits **590**), and may that have a lateral crease or fold line **592***b* extending therebetween at the top ends.

When carrier **572***a* is folded to the arrangement shown in FIG. **14**, front portion **574** may engage adhesive band **588**, thereby retaining carrier **572***a* in that folded arrangement. This fold arrangement also allows flaps **586***a*-**586***c* to be formed for use in retaining a product sample (not shown). In particular, outer flaps **586***a* and **586***b* may extend around one side of the product sample, while inner flap **586***c* may extend around the opposing side of the product sample.

As is evident from the exemplary embodiments illustrated in FIGS. **14**-**17**, the product tag panel (e.g., product tag panel **524** and carrier **572**) may take a number of forms for purposes of conveying information, bearing sample products, and the like. The product tag panel may be a single planar sheet (such as illustrated in assemblies **10**, **210**, **310**, and **410**) or may be a folded sheet (such as illustrated in assemblies **110** and **510**). In addition, product tag panel **524** may have a separable section thereon.

Such a separable section may be removed from assembly **510** by perforations to serve as an instant coupon for product sales, as a coupon for future product purchases, a mail-in product warranty registration card, or some other purpose where it is desired to separate information from assembly **510** and/or product to which it is attached. In addition, other articles may be attached to product tag panel **524**, such as for example, a product instruction booklet, product dispenser, or the like. Such items may be affixed by an adhesive or other suitable known attachment or bonding scheme.

FIGS. **18**-**20** illustrate assembly **610**, which is a sixth alternative to assembly **10** (shown in FIGS. **1**-**3**A), and where the respective reference labels are increased by "600" relative to FIGS. **1**-**3**. As shown in FIG. **18**, assembly **610** includes hang tab panel **620**, aperture panel **622**, product tag panel **624**, and lower aperture panel **666**. In this embodiment, hang tab panel **620** and product tag panel **624** are integrally formed from the same sheet of tab/tag material, which is folded over at hinge line **693** in a similar manner to that discussed above for assembly **110** (shown in FIG. **4**).

Furthermore, aperture panel **622** extends adjacent to rear surface **646** of hang tab panel **620** and rear surface **650** of product tag panel **624**. As such, aperture **632** of aperture panel **622** and aperture **668** of lower aperture panel **666** may be used to retain a product, such as screwdriver **694** (shown with hidden lines). In this embodiment, apertures **632** and **668** may also have different dimensions to accommodate the dimensions of the intended products. For example, as shown, aperture **632** has a larger diameter than aperture **668** such that aperture **632** may retain the handle portion of screwdriver **694** and aperture **668** may retain the smaller-diameter, head portion of screwdriver **694**.

During use, aperture panel **622** and lower aperture panel **666** may be bent downward, as depicted by arrows **695***a* and **695***b*, and screwdriver **694** may be inserted through apertures **632** and **694** to screwdriver **694** to assembly **610**. Hang tab panel **620** may then be opened (i.e., unfolded) from product tag panel **624**, as depicted by arrow **695***c*, where front surface **628** of hang tab panel **620** and front surface **638** of product tag panel **638** provide suitable locations for presenting indicia or other information.

Hang tab panel **620** may then be mounted on to hook **612** with aperture **626** to suspend to assembly **610** and screwdriver **694** from hook **612**. While suspended from hook **612**, indicia or other information printed on one or more of front surfaces **628** and **638** may then be prominently displayed. For example, front surfaces **628** and **638** are suitable for displaying information relating to screwdriver **694**, such as brand logos, product identification, price information, universal product codes, and the like. As such, assembly **610** is also a convenient and effective system for retaining and displaying products, such as screwdriver **694**.

As shown in FIGS. **19** and **20**, bond zone **642** between aperture panel **622** and product tag panel **624** engages a portion of product tag panel **624**, as well as hinge line **693**, in the same manner as discussed above for assembly **110** (shown in FIG. **4**). However, in this embodiment, the bond zone corresponding to bond zone **42** (shown in FIGS. **2** and **3**) is omitted, since the opposing end of aperture panel **622** is not connected to hang tab panel **620**.

Assembly **610** may be manufactured using a similar process to that discussed above for assembly **10** and sheet **10***a* (shown in FIG. **3**A). In this embodiment, however, a strip of tab/tag material for the foldable hang tab panels **620**/product tag panels **624** may be aligned with advancing strips of elastic materials for the aperture panels **622** and the lower aperture panels **666**. The advancing strips may then be bonded together (e.g., thermally bonded) at bond zone areas that correspond to bond zones **642** and **670** for each assembly **610**.

Furthermore, because hang tab panel **620** and product tag panel **624** are provided as a single, foldable sheet, indicia or other information may be pre-printed on the single, foldable sheet prior to the bonding step. Alternatively, after the bonding step, indicia or other information may be printed on one or more of the surfaces of hang tab panel **620** and product tag panel **624**, as desired. Score or perforation lines may then be formed in the advancing sheet to define the separable assemblies **610**, and apertures **626**, **632**, and **668** may be cut out of the advancing sheet for each assembly **610**. After the manufacturing process is complete, the individual assemblies **610** may be separated for individual use, or maintained in sheet or roll form for bulk shipping and subsequent use.

FIG. **21** illustrates assembly **710**, which is a seventh alternative to assembly **10** (shown in FIGS. **1**-**3**A), and where the respective reference labels are increased by "700"

relative to FIGS. **1-3**. As shown in FIG. **21**, assembly **710** includes aperture panel **722** having shoulders **796** defined by neck indentations **797** around aperture **732**. Examples of suitable arrangements for shoulders **796** and neck indentations **797** are disclosed in U.S. Pat. No. 7,281,345.

FIG. **22** illustrates assembly **810**, which is an eighth alternative to assembly **10** (shown in FIGS. **1-3**A), and where the respective reference labels are increased by "800" relative to FIGS. **1-3**. As shown in FIG. **22**, assembly **810** is similar to assembly **710** (shown in FIG. **21**), and further includes lower aperture panel **866** having aperture **868**. Elastic panel **866** and aperture **868** may function in the same manner as discussed above for elastic panel **466** and aperture **468** (shown in FIGS. **11-13**) for providing an additional securing mechanism.

FIGS. **23** and **24** illustrate assembly **910**, which is a ninth alternative to assembly **10** (shown in FIGS. **1-3**A), and where the respective reference labels are increased by "900" relative to FIGS. **1-3**. In this embodiment, aperture panel **910** includes shoulders **996** defined by neck indentations **997** around aperture **932**, as discussed above for assemblies **710** and **810** (shown in FIGS. **21** and **22**). In comparison to assemblies **710** and **810**, however, aperture panel **922** compositionally includes one or more thermosensitive materials that shrink when exposed to heat above a specified temperature. Such materials are sometimes commonly referred to as "shrink wrap" or "shrink film" materials.

Suitable thermosensitive materials for use in aperture panel **922** include polymeric materials (e.g., polyolefins) that shrink tightly over covered items when heated. The suitable thermosensitive material may be compounded to shrink in one direction (unidirectional or mono-directional) or in both directions (bi-directional). During formation of a thermosensitive material film, the thermosensitive material may be stretched while warm to orient the molecules from their initial random pattern. Cooling the film sets the film's characteristics until it is re-heated, which then causes the film to shrink back to its initial dimensions.

The thermosensitive material of aperture panel **922** is desirably flexible enough to be inserted onto a product to which assembly **910** is to be attached. However, in comparison to the elastic materials of the above-discussed aperture panels, which desirably have dimensions that are smaller than the dimensions of the intended products, due to the shrinkable nature of the thermosensitive material, aperture **932** may have dimensions that are larger than the dimensions of the intended product. This allows the product to be readily inserted through aperture **932**. Once the product has been inserted into aperture **932**, heat may be applied to aperture panel **922** (at least to a central portion thereof that includes aperture **932**, including and/or between neck indentations **997**) to a temperature necessary to cause shrinkage of the central portion. This secures assembly **910** to the product.

The shape of aperture panel **922** may be dependent upon the thermosensitive material used, as well as the product to which it is to be applied. For instance, a narrower loop, longer or wider necks, broader shoulders, or some other configuration (e.g., even rectangular, such as panel **22**, shown in FIGS. **1** and **2**) may be suitable, depending upon the desired end characteristics of assembly **910** relative to the product to which assembly **910** is to be attached.

The provision of the neck indentations **797** may also facilitate sufficient separation of the heated central portion of aperture panel **922** from bond zones **942** and **944**. Such physical separation may be desirable, as the integrity of bond zones **942** and **944** are desirably not be compromised by the heating of the aperture panel **922** as it is "shrink bound" and secured to a product.

In one embodiment, lower aperture panel **966** may compositionally include either one or more elastic materials to function in the same manner as discussed above for lower aperture panel **446** (shown in FIGS. **11-13**). In alternative embodiment, lower aperture panel **966** may compositionally include one or more thermosensitive materials to function in a similar manner to that discussed above for aperture panel **922**.

Although aperture panel **922** may be subject to some deformation as heat is applied thereto, it may still be used to bear indicia on front surface **934**. During use, a product may be inserted through apertures **932** and **968**. One or both of aperture panel **922** and lower aperture panel **966** may then be subjected to heat to shrink bound aperture panel **992** and/or lower aperture panel **966** around the product. Hang tab panel **928** may then be mounted on to a retention mechanism with aperture **926** to suspend to assembly **910** and the product from the retention mechanism. While suspended from the retention mechanism, indicia or other information printed on one or more of front surfaces **928**, **934**, and **938** may then be prominently displayed. For example, front surface **928** of hang tab panel **920** and front surface **938** of product tag panel **924** are suitable for displaying information relating to the product, such as brand logos, product identification, price information, universal product codes, and the like. As such, assembly **910** is also a convenient and effective system for retaining and displaying products.

FIGS. **25** and **26** illustrate assembly **1010**, which is a tenth alternative to assembly **10** (shown in FIGS. **1-3**A), and where the respective reference labels are increased by "1000" relative to FIGS. **1-3**. Assembly **1010** is similar to assembly **910** (shown in FIGS. **23** and **24**), and includes aperture panel **1022** and lower aperture panel **1066**, one or both of which compositionally includes a thermosensitive material.

Assembly **1010** also includes elastic bridge panels **1098***a* and **1098***b*, located on the opposing ends of aperture panel **1022**. Suitable materials for elastic bridge panels **1098***a* and **1098***b* include those discussed above for aperture panel **22** (shown in FIGS. **1-3**A). As shown, elastic bridge panel **1098***a* interconnects hang tab panel **1020** and aperture panel **1022** with bond zones **1042***a* and **1042***b*, respectively. Similarly, elastic bridge panel **1098***b* interconnects aperture panel **1022** and product tag panel **1024** with bond zones **1044***a* and **1044***b*, respectively. In an alternative embodiment, which is suitable when lower aperture panel **1066** compositionally includes a thermosensitive material, an additional elastic bridge feature (not shown) may interconnect product tag panel **1024** and lower aperture panel **1066**.

The addition of elastic bridge panels **1098***a* and **1098***b* is suitable for further insulating hang tab panel **1020** and product tag panel **1024** from the deformation that occurs upon heating of aperture panel **1022**. Elastic bridge panels **1098***a* and **1098***b* may also further provide flexible and resilient bridges or connections between aperture panel **1022** and hang tab panel **1020** and product tag panel **1024**.

FIGS. **27-32** illustrate additional alternative embodiments in which the assemblies are folded end-to-end during use to suspend and display products from retention mechanisms. FIGS. **27-29** illustrate assembly **1110**, which is an eleventh alternative to assembly **10** (shown in FIGS. **1-3**A), and where the respective reference labels are increased by "1100" relative to FIGS. **1-3**. As shown in FIG. **27**, in this embodiment, both hang tab panel **1120** and product tab panel

1124 include apertures for engagement with hook 1112 or other retention mechanism. In particular, product tab panel 1124 also includes aperture 1300.

During use, portions of a product (e.g., neck 1116 and cap 1118 of bottle 1114) may be inserted through aperture 1132 of aperture panel 1122 to secure bottle 1114 to assembly 1110. Assembly 1110 may then be folded up such that the opposing ends of hang tab panel 1120 and product tab panel 1124 contact each other. In one embodiment, aperture panel 1122 bends (as illustrated in FIG. 27) to accommodate such folding. In this situation, apertures 1126 and 1300 are desirably aligned to allow assembly 1110 to be mounted on to hook 1112, thereby suspending assembly 1110 and bottle 1114 from hook 1112.

While suspended from hook 1112, indicia or other information printed on one or more of the front and rear surfaces of assembly 1110 may then be prominently displayed. For example, rear surface 1146 of hang tab panel 1120 and rear surface 1150 of product tag panel 1124 are suitable for displaying information relating to bottle 1114, such as brand logos, product identification, price information, universal product codes, and the like.

As shown in FIGS. 28 and 29, hang tab panel 1120 includes adhesive band 1302, which is a band of one or more adhesive materials (e.g., one or more pressure sensitive adhesives). When assembly 1110 is folded to the arrangement shown in FIG. 27, a portion of product tag panel 1124 may engage adhesive band 1302, thereby retaining assembly 1110 in the folded arrangement shown in FIG. 27. In an alternative embodiment, an adhesive band may be retained on product tag panel 1124 in lieu of, or in addition to, adhesive band 1302.

FIGS. 30-32 illustrate assembly 1210, which is a twelfth alternative to assembly 10 (shown in FIGS. 1-3A), and where the respective reference labels are increased by "1200" relative to FIGS. 1-3. As shown in FIG. 30, in this embodiment, both hang tab panel 1220 and product tab panel 1224 include apertures for engagement with hook 1212 or other retention mechanism. In particular, product tab panel 1224 also includes aperture 1404.

Furthermore, hang tab panel 1220 and product tag panel 1224 may be formed same sheet of panel material, which is folded over at hinge line 1406. Additionally, aperture panel 1222 is bonded to the opposing end of hang tab panel 1220 from hinge line 1406. Assembly 1210 also includes lower aperture panel 1266, which may function in a similar manner to lower aperture panel 466 (shown in FIGS. 11-13).

During use, assembly 1210 may be folded along hinge line 1406 such that apertures 1226 and 1404 are generally aligned. Portions of a product (e.g., neck 1216 and cap 1218 of bottle 1214) may then be inserted through aperture 1268 of lower aperture panel 1266 and aperture 1232 of aperture panel 1222 to secure bottle 1214 to assembly 1210. The dual-aperture retention further secures bottle 1214 to assembly 1210, while also maintaining assembly 1210 in the folded arrangement shown in FIG. 30.

The general alignment of apertures 1226 and 1404 allow assembly 1210 to be mounted on to hook 1212, thereby suspending assembly 1210 and bottle 1214 from hook 1212. While suspended from hook 1212, indicia or other information printed on one or more of the front and rear surfaces of assembly 1210 may then be prominently displayed. For example, rear surface 1246 of hang tab panel 1220 and rear surface 1250 of product tag panel 1224 are suitable for displaying information relating to bottle 1214, such as brand logos, product identification, price information, universal product codes, and the like.

As shown in FIGS. 31 and 32, hang tab panel 1220 is bonded to aperture panel 1222 along bond zone 1242, and product tag panel 1224 is bonded to lower aperture panel 1266 along bond zone 1270. Accordingly, in this embodiment, the relative locations of hang tab panel 1220 and aperture panel 1222 preclude the need for a bond zone corresponding to bond zone 44 (shown in FIGS. 2 and 3). In alternative embodiments, one or both of hang tab panel 1220 and product tag panel 1224 may include a band of one or more adhesive materials (e.g., one or more pressure sensitive adhesives) or other mechanical forms of engagement to assist in maintaining assembly 1210 in the folded arrangement shown in FIG. 30.

The hang tab and product tag assemblies disclosed herein are elegant and simple arrangements to provide additional product promotion and/or informational material, at the point of sale. Each assembly further provides the product with a hang tab suitable for allowing the product to be hung from a hook for display and easy retrieval by a consumer or user.

Although the hang tab and product tag assembly disclosed herein has been described with respect to several embodiments, workers skilled in the art will recognize that changes may be made in form and detail without departing from the spirit and scope of the disclosure.

The invention claimed is:

1. A hang tab and product tag assembly comprising:
a first panel comprising a first retention aperture configured to engage with a retention mechanism, wherein the first panel is inextensible;
a second panel comprising:
an elastic material;
a first end overlapping and flatly conjoined with the first panel at a first bond zone;
a second end; and
an aperture located between the first end and the second end, wherein the aperture is configured to stretch between relaxed and stretched states; and
a third panel overlapping and flatly conjoined with the second end of the second panel at a second bond zone, wherein the third panel is inextensible, and wherein the third panel further comprises a second retention aperture.

2. The hang tab and product tag assembly of claim 1, wherein the first panel and the third panel are each less flexible than the second panel.

3. The hang tab and product tag assembly of claim 1, wherein the third panel comprises a first portion and a second portion that are connected to each other along a hinge line.

4. The hang tab and product tag assembly of claim 1, and further comprising a foldable carrier that is integrally connected to the third panel.

5. The hang tab and product tag assembly of claim 1, wherein the third panel comprises a hinge line, and wherein the third panel is operably connected to the second panel adjacent to the hinge line.

6. The hang tab and product tag assembly of claim 1, further comprising an adhesive disposed on the third panel.

7. A hang tab and product tag assembly comprising:
a first panel comprising an aperture configured to engage with a retention mechanism, wherein the first panel is inextensible;
a second panel comprising:
an elastic material;
a first end overlapping and flatly conjoined with the first panel at a first bond zone;

a second end; and

an aperture located between the first end and the second end, wherein the aperture is configured to stretch between relaxed and stretched states;

a third panel overlapping and flatly conjoined with the second end of the second panel at a second bond zone, wherein the third panel is inextensible; and

a fourth panel operably secured to the third panel, the fourth panel comprising an aperture that is configured to adjust to different dimensions.

8. The hang tab and product tag assembly of claim **7**, wherein the third panel comprises a first portion and a second portion that are connected to each other along a hinge line.

9. The hang tab and product tag assembly of claim **7**, and further comprising a foldable carrier that is connected to the third panel.

10. The hang tab and product tag assembly of claim **7**, further comprising an adhesive disposed on the third panel.

11. A hang tab and product tag assembly comprising:

a first inextensible panel comprising an aperture configured to engage with a retention mechanism;

a second panel configured to extend at an angle from the first panel, wherein at least a middle portion of the second panel compositionally comprises an elastic material, the second panel comprising:

a first end flatly conjoined with the first panel;

a second end;

the middle portion located between the first end and the second end, wherein the middle portion includes an aperture through the second panel that is configured to stretch between relaxed and stretched states; and

a second portion of the second panel defines a border of the second panel, and wherein the middle portion extends across an opening of the border; and

a third inextensible panel flatly conjoined with the second end of the second panel, wherein the third panel is configured to extend at an angle from the second panel, the third panel having a surface comprising information selected from the group consisting of textual indicia, illustrative indicia, tactile information, machine readable information, and combinations thereof;

wherein the first panel, the second portion of the second panel, and the third panel are integrally connected.

12. A hang tab and product tag assembly of claim **11**, wherein the first panel and the third panel are each less flexible than the middle portion of the second panel.

13. The hang tab and product tag assembly of claim **11**, and further comprising a fourth elastic panel operably secured to the third panel, the fourth elastic panel comprising an aperture that is configured to adjust to different dimensions.

14. The hang tab and product tag assembly of claim **11**, further comprising a second retention aperture disposed in the third panel.

15. The hang tab and product tag assembly of claim **11**, further comprising an adhesive disposed on the third panel.

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